SCOPE OF WORK

Generator Replacements

Richard J. Hughes Justice Complex
Trenton, Mercer County, N.J.

Project No. A1296-00

STATE OF NEW JERSEY

Honorable Philip D. Murphy, Governor
Honorable Sheila Y. Oliver, Lt. Governor

DEPARTMENT OF THE TREASURY

Elizabeth Maher Muoio, Treasurer

DIVISION OF PROPERTY MANAGEMENT AND CONSTRUCTION

Christopher Chianese, Director

Date: 6/4/20 Final

Document Format Revision 1-17-18

TABLE OF CONTENTS

SECTION **PAGE**

I. OBJECTIVE 6

II. CONSULTANT QUALIFICATIONS 6

A. CONSULTANT & SUB-CONSULTANT PRE-QUALIFICATIONS 6

III. PROJECT BUDGET 6

A. CONSTRUCTION COST ESTIMATE (CCE) 6
B. CURRENT WORKING ESTIMATE (CWE) 6
C. CONSULTANT'S FEES 7

IV. PROJECT SCHEDULE 7

A. SCOPE OF WORK DESIGN & CONSTRUCTION SCHEDULE 7
B. CONSULTANT'S PROPOSED DESIGN & CONSTRUCTION SCHEDULE 8
C. CONSULTANT DESIGN SCHEDULE 8
D. BID DOCUMENT CONSTRUCTION SCHEDULE 8
E. CONTRACTOR CONSTRUCTION PROGRESS SCHEDULE 9

V. PROJECT SITE LOCATION & TEAM MEMBERS 9

A. PROJECT SITE ADDRESS 9
B. PROJECT TEAM MEMBER DIRECTORY 10
1. 1. DPMC Representative: 10
2. 2. Client Agency Representative: 10

VI. PROJECT DEFINITION 10

A. FUNCTIONAL DESCRIPTION OF THE BUILDING 10
1. Building Description: 10

VII. CONSULTANT DESIGN RESPONSIBILITIES 11

A. GENERATOR INSTALLATION 11
1. General: 11
B. GENERATOR REPLACEMENT CRITERIA 11
1. Equipment Removal: 11
2. New Generators: 11
3. Generator Pads: 12
4. Control Equipment: 12
5. Drawings: 12
6. Equipment Installation Schedule: 12

7. Equipment Tests: 13
8. Spare Parts: 13
C. ADDITIONAL DESIGN REQUIREMENTS 13
1. Construction Work Area Requirements: 13
2. Fire Protection: 13
3. Training: 14
4. Emergency Lighting: 14
D. GENERAL DESIGN OVERVIEW 14
1. Design Detail: 14
2. Specification Format: 15
3. Submittal Schedule: 15
4. Construction Cost Estimates: 15
E. PROJECT COMMENCEMENT 16
1. Project Directory: 16
2. Site Access: 16
3. Project Coordination: 16
4. Existing Documentation: 16
5. Scope of Work: 17
6. Project Schedule: 17
F. BUILDING & SITE INFORMATION 17
1. Building Classification: 17
2. Building Block & Lot Number: 17
3. Building Site Plan: 17
4. Site Location Map: 18
G. DESIGN MEETINGS & PRESENTATIONS 18
1. Design Meetings: 18
2. Design Presentations: 18
H. Construction Bid Document Submittal 19

VIII. CONSULTANT CONSTRUCTION RESPONSIBILITIES 19

A. GENERAL CONSTRUCTION ADMINISTRATION OVERVIEW 19
B. PRE-BID MEETING 19
C. POST BID REVIEW MEETING, RECOMMENDATION FOR AWARD 19
1. Post Bid Review: 19
2. Review Meeting: 20
3. Substitutions: 20
4. Schedule: 20
5. Performance: 21
6. Letter of Recommendation: 21
7. Conformed Drawings: 21
D. DIRECTOR'S HEARING 21
E. CONSTRUCTION JOB MEETINGS, SCHEDULES, LOGS 22
1. Meetings: 22

2. Schedules: 22
3. Submittal Log: 22
F. CONSTRUCTION SITE ADMINISTRATION SERVICES 23
G. SUB-CONSULTANT PARTICIPATION 24
H. DRAWINGS 24
1. Shop Drawings: 24
2. As-Built & Record Set Drawings: 24
I. CONSTRUCTION DEFICIENCY LIST 25
J. INSPECTIONS: SUBSTANTIAL & FINAL COMPLETION 25
K. CLOSE-OUT DOCUMENTS 25
L. CLOSE-OUT ACTIVITY TIME 26
M. TESTING, TRAINING, MANUALS AND ATTIC STOCK 26
1. Testing: 26
2. Training: 26
3. Operation & Maintenance Manuals: 26
4. Attic Stock: 27
N. CHANGE ORDERS 27
1. Consultant: 27
2. Contractor: 27
3. Recommendation for Approval: 28
4. Code Review: 28
5. Cost Estimate: 28
6. Time Extension: 29
7. Submission: 29
8. Meetings: 29
9. Consultant Fee: 29

IX. PERMITS & APPROVALS 30

A. NJ UNIFORM CONSTRUCTION CODE PERMIT 30
1. Prior Approval Certification Letters: 30
2. Multi-building or Multi-site Permits: 31
3. Special Inspections: 31
B. OTHER REGULATORY AGENCY PERMITS, CERTIFICATES AND APPROVALS 31
C. STATE INSURANCE APPROVAL 32
D. PUBLIC EMPLOYEES OCCUPATIONAL SAFETY & HEALTH PROGRAM 32
E. PERMIT MEETINGS 33
F. MANDATORY NOTIFICATIONS 33
G. CONSULTANT FEE 33

X. GENERAL REQUIREMENTS 33

A. SCOPE CHANGES 33
B. ERRORS AND OMISSIONS 33
C. ENERGY INCENTIVE PROGRAM 34

XI. ALLOWANCES 34

A. PERMIT FEE ALLOWANCE 34
1. Permits: 34
2. Permit Costs: 34
3. Applications: 34
4. Consultant Fee: 35

XII. SUBMITTAL REQUIREMENTS 35

A. CONTRACT DELIVERABLES 35
B. CATALOG CUTS 35
C. PROJECT DOCUMENT BOOKLET 35
D. DESIGN DOCUMENT CHANGES 35
E. SINGLE-PRIME CONTRACT 36

XIII. SOW SIGNATURE APPROVAL SHEET 37

XIV. CONTRACT DELIVERABLES 38

XV. EXHIBITS 44

A. SAMPLE PROJECT SCHEDULE FORMAT
B. PROJECT SITE LOCATION
C. RICHARD J. HUGHES JUSTICE COMPLEX
D. FEASIBILITY REPORT

I. OBJECTIVE

The objective of this project is to remove and replace the existing generators and associated controls that provide backup power, fire protection and security to the Richard J. Hughes Justice Complex in Trenton New Jersey.

II. CONSULTANT QUALIFICATIONS

A. CONSULTANT & SUB-CONSULTANT PRE-QUALIFICATIONS

The Consultant shall be a firm pre-qualified with the Division of Property Management & Construction (DPMC) in the following discipline(s):

- **P002 Electrical Engineering Professional Discipline**

The Consultant shall also have in-house capabilities or Sub-Consultants pre-qualified with DPMC in:

- **P025 Estimating/ Cost Analysis**

As well as, **any and all** other Architectural, Engineering and Specialty Disciplines necessary to complete the project as described in this Scope of Work (SOW).

III. PROJECT BUDGET

A. CONSTRUCTION COST ESTIMATE (CCE)

The initial Construction Cost Estimate (CCE) for this project is $3,424,685

The Consultant shall review this Scope of Work and provide a narrative evaluation and analysis of the accuracy of the proposed project CCE in their technical proposal based on their professional experience and opinion.

B. CURRENT WORKING ESTIMATE (CWE)

The Current Working Estimate (CWE) for this project is $4,373,364

The CWE includes the construction cost estimate and all consulting, permitting and administrative fees.

The CWE is the Client Agency's financial budget based on this project Scope of Work and shall not be exceeded during the design and construction phases of the project unless DPMC approves the change in Scope of Work through a Contract amendment.

C. CONSULTANT'S FEES

The construction cost estimate for this project ***shall not*** be used as a basis for the Consultant's design and construction administration fees. The Consultant's fees shall be based on the information contained in this Scope of Work document and the observations made and/or the additional information received during the pre-proposal meeting.

IV. PROJECT SCHEDULE

A. SCOPE OF WORK DESIGN & CONSTRUCTION SCHEDULE

The following schedule identifies the estimated design and construction phases for this project and the estimated durations.

PROJECT PHASE	ESTIMATED DURATION (Calendar Days)
1. Site Access Approvals & Schedule Design Kick-off Meeting	**14**
2. Design Development Phase 50% (Minimum)	**42**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14
3. Final Design Phase 100%	**42**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14
4 Final Design Re-Submission to Address Comments	**7**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14
5. Permit Application Phase	**7**
• *Issue Plan Release*	
6. Bid Phase	**42**
7. Award Phase	**28**
8. Construction Phase	**180**

B. CONSULTANT'S PROPOSED DESIGN & CONSTRUCTION SCHEDULE

The Consultant shall submit a project design and construction bar chart schedule with their technical proposal that is similar in format and detail to the schedule depicted in **Exhibit 'A'**. The bar chart schedule developed by the Consultant shall reflect their recommended project phases, phase activities, activity durations.

The Consultant shall estimate the duration of the project Close-Out Phase based on the anticipated time required to complete each deliverable identified in Section XIV of this document entitled "Contract Deliverables - Project Close-Out Phase" and include this information in the bar chart schedule submitted.

A written narrative shall also be included with the technical proposal explaining the schedule submitted and the reasons why and how it can be completed in the time frame proposed by the Consultant.

This schedule and narrative will be reviewed by the Consultant Selection Committee as part of the evaluation process and will be assigned a score commensurate with clarity and comprehensiveness of the submission.

C. CONSULTANT DESIGN SCHEDULE

Based on the Notice to Proceed, Consultant shall update their approved schedule and shall distribute it at the design kickoff meeting. Note that this schedule shall be submitted in both paper format and on compact disk in a format compatible with *Microsoft Project*. This schedule will be binding for the Consultant's activities and will include the start and completion dates for each design activity. The Consultant and Project Team members shall use this schedule to ensure that all design milestone dates are being met for the project. The Consultant shall update the schedule to reflect performance periodically (minimally at each design phase) for the Project Team review and approval. Any recommendations for deviations from the approved design schedule must be explained in detail as to the causes for the deviation(s) and impact to the schedule.

D. BID DOCUMENT CONSTRUCTION SCHEDULE

The Consultant shall include a construction schedule in Division 1 of the specification bid document. This schedule shall contain, at minimum, the major activities and their durations for each trade specified for the project. This schedule shall be in "bar chart" format and will be used by the Contractors as an aid in determining their bid price. It shall reflect special sequencing or phased construction requirements including, but not limited to: special hours for building access, weather restrictions, imposed constraints caused by Client Agency program schedules, security

needs, lead times for materials and equipment, anticipated delivery dates for critical items, utility interruption and shut-down constraints, and concurrent construction activities of other projects at the site and any other item identified by the Consultant during the design phases of the project.

E. CONTRACTOR CONSTRUCTION PROGRESS SCHEDULE

The Contractor shall be responsible for preparing a coordinated combined progress schedule with the Sub-Contractors after the award of the contract. This schedule shall meet all of the requirements identified in the Consultant's construction schedule. The construction schedule shall be completed in accordance with the latest edition of the Instructions to Bidders and General Conditions and Bulletins that may be issued on the project.

The Consultant must review and analyze this progress schedule and recommend approval/disapproval to the Project Team until a satisfactory version is approved by the Project Team. The Project Team must approve the baseline schedule prior to the start of construction and prior to the Contractor submitting invoices for payment.

The Consultant shall note in Division 1 of the specification that the State will not accept the progress schedule until it meets the project contract requirements and any delays to the start of the construction work will be against the Contractor until the date of acceptance by the State.

The construction progress schedule shall be reviewed, approved, and updated by the Contractor, Consultant, and Project Team members at each regularly scheduled construction job meeting and the Consultant shall note the date and trade(s) responsible for project delays (as applicable).

V. PROJECT SITE LOCATION & TEAM MEMBERS

A. PROJECT SITE ADDRESS

The location of the project site is:

Richard J. Hughes Justice Complex
25 Market Street
Trenton, New Jersey 08625

See **Exhibit 'B'** for the project site location.

B. PROJECT TEAM MEMBER DIRECTORY

The following are the names, addresses, and phone numbers of the Project Team members.

1. 1.DPMC Representative:

Name: Ronald Kraemer, Design Project Manager
Address: Division Property Management & Construction
20 West State Street, 3rd Floor
Trenton, NJ 08608-1206
Phone No: (609) 633-7186
E-Mail No: Ronald.Kraemer@treas.nj.gov

2. 2.Client Agency Representative:

Name: Perry Stalter, Project Manager
Address: Department of Property Management & Construction
25 Market Street
Trenton, New Jersey 08625
Phone No: (609) 633-7502
E-Mail No: Perry.Stalter@treas.nj.gov

VI. PROJECT DEFINITION

A. FUNCTIONAL DESCRIPTION OF THE BUILDING

1. Building Description:

The Richard J. Hughes Justice Complex is a 1,080,000 square foot steel and masonry building that was constructed in 1982. Floor 1 through 8 is office space that houses the three branches of State government including the Judiciary, Public Advocate, and Law & Public Safety. Floor 9 is the mechanical penthouse where the generator room is located. Level P-1 is the street level where the fuel oil pumps are located. Level P-2, the lowest level, is the parking garage and mechanical/electrical equipment area. It is classified as Business/Assembly-3 Use Group and Type 1-B construction.

Fuel oil for the generators is supplied by an underground tank and pumped up to the day tank on the penthouse level by pumps on the P-1 level.

VII. CONSULTANT DESIGN RESPONSIBILITIES

A. GENERATOR INSTALLATION

1. General:

The basis of the design for this project is to be based on the Feasibility Report for the Generator and Controls Upgrades at the Richard J. Hughes Justice Complex, completed by Holstein White Engineers Inc., dated May 17th, 2019, see **Exhibit 'D'**.

The Consultant is to provide a new design, along with specifications to address the recommendations outlined within the report. The specifications shall describe the preferred new systems and equipment and shall list the names of three (3) equal manufacturers for each.

B. GENERATOR REPLACEMENT CRITERIA

The items identified below are meant to be used as a design guide; however, it shall be the responsibility of the Consultant to determine the final design criteria to make a complete working installation based on their experience with projects similar in size and scope to this one, and the equipment manufacturer's requirements.

The Consultant shall review the recommendations made in the Holstein White report and provide the design and specifications for the installation of new generators, controls and associated switchgear and equipment to construct the new back-up generator system.

1. Equipment Removal:

The Consultant shall provide a demolition plan, as necessary, specifying the existing equipment to be removed and disposed of by the contractor. Provide a phasing plan for equipment removal and provide for temporary backup generator power as necessary.

2. New Generators:

Provide the design and specifications for four new diesel generators, 600KW / 750kVA each, and associated equipment to replace all four existing generators at the Richard J. Hughes Justice Complex. Provide for new power and control wiring required for the new generators. New generators will be in weather tight enclosures located outside.

The new generators must provide emergency power within 10 seconds of normal power failure.

Investigate industry-recognized manufacturers of the replacement components to be specified in the design documents. Items to consider shall include, but not be limited to product reliability and performance, manufacturer's years of service, equipment costs, warranties, guarantees, delivery schedule, compatibility with the existing equipment and related components, physical size, etc. Note that the names of three "equal" manufacturers shall be identified and included in the design documents for reference.

3. Generator Pads:

The Consultant shall provide the design and specifications to construct concrete pads for the new generators. Provide signed and sealed structural calculations for the new generator pads verifying that they will support the new equipment.

4. Control Equipment:

Provide the design and specification for Paralleling Controls that shall be located adjacent to the new generators. The controls shall be housed in a weatherproof enclosure. The switchboard shall include a motor operated circuit breaker for termination of each generator feed on the parallel bus.

5. Drawings:

Provide a Single- Line Diagram to show new generator tie-in details that identifies the name, location, and rating of all switchgears, transformers and generator control panel components to be replaced. Include all demand factors, switch and panel schedules, wiring identification codes, drawing legends, etc. on the documents.

Provide short circuit study and selective coordination study of over-current protection devices.

Provide details on the drawings of any special assembly, electrical tie in requirements, or any other governing or limiting factor of the manufacturer's system component. The drawings shall be prepared with sufficient flexibility to accommodate variations among the equipment manufacturers approved by the Project Team.

6. Equipment Installation Schedule:

Develop a proposed sequenced phased construction schedule that identifies how the new generators, switchgears, transformers and generator control panel components and other related items are to be installed without jeopardizing the security of the facility and minimize the required downtime and switchover periods. The schedule shall consider all long lead time items to ensure they will be on site and available for installation when required. Premium time and

temporary emergency backup power shall be provided if required. The final approved schedule shall be included in Division 1 of the specification for Contractor reference during bidding.

Determine all construction schedule coordination requirements with the local Electrical Utility Company and representatives of the Richard J. Hughes Justice Complex. Identify the need for a temporary emergency generator during the anticipated emergency power shutdown duration and include the information in the design documents for reference.

7. Equipment Tests:

The design documents shall include detailed test requirements of the new generators and systems. The Contractor and equipment manufacturer shall be in attendance when a certified testing lab performs operational tests of the completed installation to certify their proper operation. All test results shall be bound in a booklet and three (3) copies presented to the Project Manager for record. The State of NJ will also require that all electrical connections made in this project be tested upon completion of the work by the installer. This must be included in the project documentation.

8. Spare Parts:

A critical spare parts list shall be prepared for all appropriate items and purchased as part of this project. The Consultant shall include provisions for the manufacturer/vendor of the equipment to provide critical spare and maintenance parts as part of this project. All of the critical parts shall be reviewed and approved by the Client Agencies.

C. ADDITIONAL DESIGN REQUIREMENTS

1. Construction Work Area Requirements:

Indicate the location and dimensioned details for any temporary construction barriers for security and/or safety, plastic barriers for dust and dirt containment, and special covers for equipment protection during the removal and installation of the new equipment and system components. The design documents shall describe all salvage items that are to be retained by Client Agencies.

2. Fire Protection:

Address the fire protection requirements during any demolition and installation of equipment and systems. Language shall be included in the design documents that states any acetylene, welding, brazing, and soldering equipment, or other potential source of fire ignition cannot be used on the construction site until a fire watch program has been submitted by the Contractor and approved by the Consultant and Project Team members. The Client Agencies will not perform the required fire watch.

3. Training:

The authorized service representative(s) shall train the facility personnel in the operation and maintenance of the new equipment and systems installed, including step-by-step troubleshooting with required test equipment. The representative shall be familiar with the installed items and have a minimum of 3 years of training experience.

Three (3) copies of the operation and maintenance manuals shall be prepared and presented to the Project Manager for reference.

4. Emergency Lighting:

The Consultant shall include in their design an emergency lighting system within the generator and switchgear areas, as needed.

D. GENERAL DESIGN OVERVIEW

1. Design Detail:

Section VII of this Scope of Work is intended as a guide for the Consultant to understand the overall basic design requirements of the project and is not intended to identify each specific design component related to code and construction items. The Consultant shall provide those details during the design phase of the project ensuring that they are in compliance with all applicable codes, regulating authorities, and the guidelines established in the DPMC Procedures for Architects and Engineers Manual.

The Consultant shall understand that construction documents submitted to DPMC shall go beyond the basic requirements set forth by the Uniform Construction Code N.J.A.C. 5:23-2.15(f). Drawings and specifications shall provide detail beyond that required to merely show the nature and character of the work to be performed. The construction documents shall provide sufficient information and detail to illustrate, describe and clearly delineate the design intent of the Consultant and enable all Contractors to uniformly bid the project.

The Consultant shall review and comply with the DPMC "Plan Review Instructions" which can be found on DPMC's web site at:

http://www.state.nj.us/treasury/dpmc/lists_and_publications.shtml

The Consultant shall ensure that all of the design items described in this scope of work are addressed and included in the project drawings and specification sections where appropriate.

It shall be the Consultant's responsibility to provide all of the design elements for this project. Under no circumstance may they delegate the responsibility of the design; or portions thereof, to the Contractor unless specifically allowed in this Scope of Work.

2. Specification Format:

The Consultant shall prepare the construction specifications in the Construction Specifications Institute (CSI) format entitled MasterFormat©, latest edition.

The project construction specifications shall include only those CSI MasterFormat© specification sections and divisions applicable to this specific project.

3. Submittal Schedule:

The Consultant shall include a submittal schedule in Division 1 of the specifications. The schedule (list of required submittals) shall identify the general conditions and/or specification section (number and name) and the type of submittal required (material data, product data, test results, calculations, etc.). The submittal schedule is a compilation of the submittals required on the project and is provided as an aid to the contractor.

4. Construction Cost Estimates:

The Consultant shall include with each design submittal phase identified in Paragraph IV.A, including the Permit Application Phase and Bid Phase, a detailed construction cost estimate itemized and summarized by the divisions and sections of the Construction Specification Institute (CSI) MasterFormat© 2014 applicable to the project.

The detailed breakdown of each work item shall include labor, equipment, material and total costs.

The construction estimate shall include all alternate bid items and all unit price items itemized and summarized by the divisions and sections of the specifications.

All cost estimates shall be adjusted for regional location, site factors, construction phasing, premium time, building use group, location of work within the building, temporary swing space, security issues, and inflation factors based on the year in which the work is to be performed.

The cost estimate shall include descriptions of all allowances and contingencies noted in the estimate.

All cost estimates must be submitted on a DPMC-38 Project Cost Analysis form at each design phase of the project supported by the detailed construction cost estimate. The Project Manager will provide cost figures for those items which may be in addition to the CCE such as art

inclusion, CM services, etc. and must be included as part of the CWE. This cost analysis must be submitted for all projects regardless of the Construction Cost Estimate amount.

E. PROJECT COMMENCEMENT

A pre-design meeting shall be scheduled with the Consultant and the Project Team members at the commencement of the project to obtain and/or coordinate the following information:

1. Project Directory:

Develop a project directory that identifies the name and phone number of key designated representatives who may be contacted during the design and construction phases of this project.

2. Site Access:

Develop procedures to access the project site and provide the names and phone numbers of approved escorts when needed. Obtain copies of special security and policy procedures that must be followed during all work conducted at the facility and include this information in Division 1 of the specification.

3. Project Coordination:

Review and become familiar with any current and/or future projects at the site that may impact the design, construction, and scheduling requirements of this project. Incorporate all appropriate information and coordination requirements in Division 1 of the specification.

4. Existing Documentation:

Copies of the following documents will be provided to each Consulting firm at the pre-proposal meeting to assist in the bidding process.

- **A1296-00: Feasibility Report, 5/17/19, Holstein White Engineers, Inc.**
- **A1139-00: As-Built Drawings, 4/15/15, Schiller and Hersh Associates, Inc.**
- **A076: As-Built Drawings, 9/13/77, Grad Hillier Architects**

Review these documents and any additional information that may be provided at a later date such as reports, studies, surveys, equipment manuals, as-built drawings, etc. The State does not attest to the accuracy of the information provided and accepts no responsibility for the consequences of errors by the use of any information and material contained in the documentation provided. It shall be the responsibility of the Consultant to verify the contents and assume full responsibility for any determination or conclusion drawn from the material used. If the information provided is insufficient, the Consultant shall take the appropriate actions necessary to obtain the additional information required.

All original documentation shall be returned to the provider at the completion of the project.

5. Scope of Work:

Review the design and construction administration responsibilities and the submission requirements identified in this Scope of Work with the Project Team members. Items such as: contract deliverables, special sequencing or phased construction requirements, special hours for construction based on Client Agency programs or building occupancy, security needs, delivery dates of critical and long lead items, utility interruptions or shut down constraints for tie-ins, weather restrictions, and coordination with other project construction activities at the site shall be addressed.

This information and all general administrative information; including a narrative summary of the work for this project, ***shall be included in Division 1*** of the specification. The Consultant shall assure that there are no conflicts between the information contained in Division 1 of the specification and the DPMC General Conditions.

6. Project Schedule:

Review and update the project design and construction schedule with the Project Team members.

F. BUILDING & SITE INFORMATION

The following information shall be included in the project design documents.

1. Building Classification:

Provide the building Use Group Classification and Construction Type on the appropriate design drawing.

2. Building Block & Lot Number:

Provide the site Block and Lot Number on the appropriate design drawing.

3. Building Site Plan:

Only when the project scope involves site work, or when the design triggers code issues that require site information to show code compliance, shall a site plan be provided that is drawn in accordance with an accurate boundary line survey. The site plan shall include, but not be limited to, the following as may be applicable:

- The size and location of new and existing buildings and additions as well as other structures.
- The distance between buildings and structures and to lot lines.
- Established and new site grades and contours as well as building finished floor elevations.
- New and existing site utilities, site vehicular and pedestrian roads, walkways and parking areas.

4. Site Location Map:

Provide a site location map on the drawing cover sheet that identifies the vehicular travel routes from major roadways to the project construction site and the approved access roads to the Contractor's worksite staging area.

G. DESIGN MEETINGS & PRESENTATIONS

1. Design Meetings:

Conduct the appropriate number of review meetings with the Project Team members during each design phase of the project so they may determine if the project meets their requirements, question any aspect of the contract deliverables, and make changes where appropriate. The Consultant shall describe the philosophy and process used in the development of the design criteria and the various alternatives considered to meet the project objectives. Selected studies, sketches, cost estimates, schedules, and other relevant information shall be presented to support the design solutions proposed. Special considerations shall also be addressed such as: Contractor site access limitations, utility shutdowns and switchover coordination, phased construction and schedule requirements, security restrictions, available swing space, material and equipment delivery dates, etc.

It shall also be the responsibility of the Consultant to arrange and require all critical Sub-Consultants to be in attendance at the design review meetings.

Record the minutes of each design meeting and distribute within seven (7) calendar days to all attendees and those persons specified to be on the distribution list by the Project Manager.

2. Design Presentations:

The minimum number of design presentations required for each phase of this project is identified below for reference:

Design Development Phase: One (1) oral presentation at phase completion.

Final Design Phase: One (1) oral presentation at phase completion.

H. CONSTRUCTION BID DOCUMENT SUBMITTAL

In addition to submitting construction bid documents as defined in Section XIV Contract Deliverables, Consultant shall submit both specifications and drawings on compact disk (CD) in *Adobe Portable Document Format (.pdf).*

VIII. CONSULTANT CONSTRUCTION RESPONSIBILITIES

A. GENERAL CONSTRUCTION ADMINISTRATION OVERVIEW

This section of the Scope of Work is intended as a guide for the Consultant to understand their overall basic construction administration responsibilities for the project and does not attempt to identify each specific activity or deliverable required during this phase. The Consultant shall obtain that information from the current publication of the DPMC Procedures for Architects and Engineers Manual and any additional information provided during the Consultant Selection Process.

B. PRE-BID MEETING

The Consultant shall attend, chair, record and distribute minutes of the Contractor pre-bid meetings. When bidders ask questions that may affect the bid price of the project, the Consultant shall develop a Bulletin(s) to clarify the bid documents in the format described in the Procedures for Architects and Engineers Manual, Section 9.2 entitled "Bulletins." These Bulletins must be sent to DPMC at least seven (7) calendar days prior to the bid opening date. DPMC will then distribute the document to all bidders.

C. POST BID REVIEW MEETING, RECOMMENDATION FOR AWARD

The Consultant; in conjunction with the Project Manager, shall review the bid proposals submitted by the various Contractors to determine the low responsible bid for the project. The Consultant; in conjunction with the Project Manager and Project Team members, shall develop a post bid questionnaire based on the requirements below and schedule a post bid review meeting with the Contractor's representative to review the construction costs and schedule, staffing, and other pertinent information to ensure they understand the Scope of the Work and that their bid proposal is complete and inclusive of all requirements necessary to deliver the project in strict accordance with the plans and specifications.

1. Post Bid Review:

Review the project bid proposals including the alternates, unit prices, and allowances within seven (7) calendar days from the bid due date. Provide a bid tabulation matrix comparing all bids submitted and make a statement about the high, low, and average bids received. Include a

comparison of the submitted bids to the approved current construction cost estimate. When applicable, provide an analysis with supporting data, detailing why the bids did not meet the construction cost estimate.

2. Review Meeting:

Arrange a meeting with the apparent low bid Contractor to discuss their bid proposal and other issues regarding the award of the contract. Remind the Contractor that this is a Lump Sum bid. Request the Contractor to confirm that their bid proposal does not contain errors. Review and confirm Alternate pricing and Unit pricing and document acceptance or rejection as appropriate.

Comment on all omissions, qualifications and unsolicited statements appearing in the proposals. Review any special circumstances of the project. Ensure the Contractor's signature appears on all post bid review documents.

3. Substitutions:

Inquire about any potential substitutions being contemplated by the Contractor and advise them of the State's guidelines for the approval of substitutions and the documentation required. Review the deadline and advise the Contractor that partial submissions are not acceptable. Submission after the deadline may be rejected by the State.

Equal substitutions that are proposed by the Contractor that are of lesser value must have a credit change order attached with the submittal (See Article 4.7.5 "Substitutions" of the General Conditions). The State has the right to reject the submission if there is no agreement on the proposed credit. Contractor will be responsible to submit a specified item.

4. Schedule:

Confirm that the Contractor is aware of the number of calendar days listed in the contract documents for the project duration and that the Contractor's bid includes compliance with the schedule duration and completion dates. Particular attention shall be given to special working conditions, long lead items and projected delivery dates, etc. Review project milestones (if applicable). This could give an indication of Contractor performance, but not allow a rejection of the bid.

Review the submittal timeframes per the Contract documents. Ask the Contractor to identify what products will take over twenty-eight (28) calendar days to deliver from the point of submittal approval.

If a CPM Schedule is required, review the provisions and have Contractor acknowledge the responsibility. Ask for the name of the CPM Scheduler and the "ballpark" costs.

5. Performance:

Investigate the past performance of Contractor by contacting Architects and owners (generally three of each) that were listed in their DPMC pre-qualification package and other references that may have been provided. Inquire how the Contractor performed with workmanship, schedule, project management, change orders, cooperation, paper work, etc.

6. Letter of Recommendation:

The Consultant shall prepare a Letter of Recommendation for contract award to the Contractor submitting the lowest responsible bid within three (3) calendar days from the post bid review meeting. The document shall contain the project title, DPMC project number, bid due date and expiration date of the proposal. It shall include a detailed narrative describing each post bid meeting agenda item identified above and a recommendation to award the contract to the apparent low bid Contractor based on the information obtained during that meeting. Describe any acceptance or rejection of Alternate pricing and Unit pricing.

Comment on any discussion with the Contractor that provides a sense of their understanding of the project and any special difficulties that they see, and how they might approach those problems.

Attach all minutes of the Post bid meeting and any other relevant correspondence with the Letter of Recommendation and submit them to the Project Manager.

7. Conformed Drawings:

The Consultant shall prepare and distribute two (2) sets of drawings stamped “Conformed Drawings” to the Project Manager that reflect all Bulletins and/or required changes, additions, and deletions to the pertinent drawings within fourteen (14) calendar days of the construction contract award date.

Any changes made in Bulletins, meeting minutes, post bid review requirements shall also be reflected in the specification.

D. DIRECTOR’S HEARING

The Consultant must attend any Director’s hearing(s) if a Contractor submits a bid protest. The Consultant shall be present to interpret the intent of the design documents and answer any technical questions that may result from the meeting. In cases where the bid protest is upheld, the Consultant shall submit a new “Letter of Recommendation” for contract award. The hours required to attend the potential hearings and to document the findings shall be estimated by the Consultant and the costs will be included in the base bid of their fee proposal.

E. CONSTRUCTION JOB MEETINGS, SCHEDULES, LOGS

The Consultant shall conduct all of the construction job meetings, to be held bi-weekly for the duration of construction, in accordance with the procedures identified in the A/E manual and those listed below.

1. Meetings:

The Consultant and Sub-Consultant(s) shall attend the pre-construction meeting and all construction job meetings during the construction phase of the project. The Consultant shall chair the meeting, transcribe and distribute the job-meeting minutes for every job meeting to all attendees and to those persons specified to be on the distribution list by the Project Manager. The Agenda for the meeting shall include, but not be limited to the items identified in the Procedures for Architects and Engineers Manual, Section 10.3.1, entitled "Agenda."

Also, the Consultant is responsible for the preparation and distribution of minutes within three (3) calendar days of the meeting. The format to be used for the minutes shall comply with those identified in the "Procedures for Architects and Engineers Manual," Section 10.3.4, entitled, "Format of Minutes." All meeting minutes are to have an "action" column indicating the party that is responsible for the action indicated and a deadline to accomplish the assigned task. These tasks must be reviewed at each job progress meeting until it is completed and the completion date of each task shall be noted in the minutes of the meeting following the task completion.

2. Schedules:

The Consultant; with the input from the Client Agency Representative and Project Manager, shall review and recommend approval of the project construction schedule prepared by the Contractor. The schedule shall identify all necessary start and completion dates of construction, construction activities, submittal process activities, material deliveries and other milestones required to give a complete review of the project.

The Consultant shall record any schedule delays, the party responsible for the delay, the schedule activity affected, and the original and new date for reference.

The Consultant shall ensure that the Contractor provides a two (2) week "look ahead" construction schedule based upon the current monthly updated schedule as approved at the bi-weekly job meetings and that identifies the daily planned activities for that period. This Contractor requirement must also be included in Division 1 of the specification for reference.

3. Submittal Log:

Based on the Submittal Schedule in Division 1 of the specifications, the Consultant shall develop and implement a submittal log that includes all of the required project submittals as identified in

the general conditions and technical specifications. The dates of submission shall be determined and approved by all affected parties during the pre-construction meeting.

Examples of the submissions to be reviewed and approved by the Consultant and Sub-Consultant (if required) include: project schedule, schedule of values, shop drawings, equipment and material catalog cuts, spec sheets, product data sheets, MSDS material safety data sheets, specification procedures, color charts, material samples, mock-ups, etc. The submittal review process must be conducted at each job progress meeting and shall include the Consultant, Sub-Consultant, Contractor, Project Manager, and designated representatives of the Client Agency.

The Consultant shall provide an updated submittal log at each job meeting that highlights the status of all required submissions.

F. CONSTRUCTION SITE ADMINISTRATION SERVICES

The Consultant and Sub-Consultant(s) shall provide construction site administration services during the duration of the project. The Consultant and Sub-Consultant(s) do not necessarily have to be on site concurrently if there are no critical activities taking place that require the Sub-Consultant's participation.

The services required shall include, but not be limited to; field observations sufficient to verify the quality and progress of construction work, conformance and compliance with the contract documents, and to attend/chair meetings as may be required by the Project Manager to resolve special issues.

Consultant and Sub-Consultant(s) shall conduct weekly site inspection/field observation visits. Site inspection/field observation visits may be conducted in conjunction with regularly scheduled bi-weekly construction job meetings, depending on the progress of work, for weeks that construction job meetings are scheduled. The Consultant and their Sub-Consultant(s) shall submit a field observation report for each site inspection to the Project Manager within three (3) calendar days of the site visit. Also, they shall conduct inspections during major construction activities including, but not limited to the following examples: concrete pours, steel and truss installations, code inspections, final testing of systems, achievement of each major milestone required on the construction schedule, and requests from the Project Manager. The assignment of a full time on-site Sub-Consultant does not relieve the Consultant of their site visit obligation.

The Consultant shall refer to Section XIV. Contract Deliverables of this Scope of Work subsection entitled "Construction Phase" to determine the extent of services and deliverables required during this phase of the project.

G. SUB-CONSULTANT PARTICIPATION

It is the responsibility of the Consultant to ensure that they have provided adequate hours and/or time allotted in their technical proposal so that their Sub-Consultants may participate in all appropriate phases and activities of this project or whenever requested by the Project Manager. This includes the pre-proposal site visit and the various design meetings and construction job meetings, site visits, and close-out activities described in this Scope of Work. Field observation reports and/or meeting minutes are required to be submitted to the Project Manager within three (3) calendar days of the site visit or meeting. All costs associated with such services shall be included in the base bid of the Consultant's fee proposal.

H. DRAWINGS

1. Shop Drawings:

Each Contractor shall review the specifications and determine the numbers and nature of each shop drawing submittal. Five (5) sets of the documents shall be submitted with reference made to the appropriate section of the specification. The Consultant shall review the Contractor's shop drawing submissions for conformity with the construction documents within seven (7) calendar days of receipt. The Consultant shall return each shop drawing submittal stamped with the appropriate action, i.e. "Approved", "Approved as Noted", "Approved as Noted Resubmit for Records", "Rejected", etc.

2. As-Built & Record Set Drawings:

The Contractor(s) shall keep the contract drawings up-to-date at all times during construction and upon completion of the project, submit their AS-BUILT drawings to the Consultant with the Contractor(s) certification as to the accuracy of the information prior to final payment. All AS-BUILT drawings submitted shall be entitled AS-BUILT above the title block and dated.

The Consultant shall review the Contractor(s)' AS-BUILT drawings at each job progress meeting to ensure that they are up-to-date. Any deficiencies shall be noted in the progress meeting minutes.

The Consultant shall acknowledge acceptance of the AS-BUILT drawings by signing a transmittal indicating they have reviewed them and that they reflect the AS-BUILT conditions as they exist.

Upon receipt of the AS-BUILT drawings from the Contractor(s), the Consultant shall obtain the original reproducible drawings from DPMC and transfer the AS-BUILT conditions to the original full sized signed reproducible drawings to reflect RECORD conditions within fourteen (14) calendar days of receipt of the AS-BUILT information.

The Consultant shall note the following statement on the original RECORD-SET drawings. "The AS-BUILT information added to this drawing(s) has been supplied by the Contractor(s). The Architect/Engineer does not assume the responsibility for its accuracy other than conformity with the design concept and general adequacy of the AS-BUILT information to the best of the Architect's/Engineer's knowledge."

Upon completion, The Consultant shall deliver the RECORD-SET original reproducible drawings to DPMC who will acknowledge their receipt in writing. This hard copy set of drawings and two (2) sets of current release AUTO CAD discs shall be submitted to DPMC. The discs shall contain all AS-BUILT drawings in both ".dwg" (native file format for AUTO CAD) and ".pdf" (*Adobe* portable document format) file formats.

I. CONSTRUCTION DEFICIENCY LIST

The Consultant shall prepare, maintain and continuously distribute an on-going deficiency list to the Contractor, Project Manager, and Client Agency Representative during the construction phase of the project. This list shall be separate correspondence from the field observation reports and shall not be considered as a punch list.

J. INSPECTIONS: SUBSTANTIAL & FINAL COMPLETION

The Consultant and their Sub-Consultant(s) accompanied by the Project Manager, Code Inspection Group, Client Agency Representative and Contractor shall conduct site inspections to determine the dates of substantial and final completion. The Project Manager will issue the only recognized official notice of substantial completion. The Consultant shall prepare and distribute the coordinated punch list, written warranties and other related DPMC forms and documents, supplied by the Contractor, to the Project Manager for review and certification of final contract acceptance.

If applicable, the punch list shall include a list of attic stock and spare parts.

K. CLOSE-OUT DOCUMENTS

The Consultant shall review all project close-out documents as submitted by the Contractors to ensure that they comply with the requirements listed in the "Procedure for Architects and Engineers' Manual." The Consultant shall forward the package to the Project Manager within fourteen (14) calendar days from the date the Certificate of Occupancy/Certificate of Approval is issued. The Consultant shall also submit a letter certifying that the project was completed in accordance with the contract documents, etc.

L. CLOSE-OUT ACTIVITY TIME

The Consultant shall provide all activities and deliverables associated with the "Close-Out Phase" of this project as part of their Lump Sum base bid. The Consultant and/or Sub-Consultant(s) may not use this time for additional job meetings or extended administrative services during the Construction Phase of the project.

M. TESTING, TRAINING, MANUALS AND ATTIC STOCK

The Consultant shall ensure that all equipment testing, training sessions and equipment manuals required for this project comply with the requirements identified below.

1. Testing:

All equipment and product testing conducted during the course of construction is the responsibility of the Contractor. However, the Consultant shall ensure the testing procedures comply with manufacturers recommendations. The Consultant shall review the final test reports and provide a written recommendation of the acceptance/rejection of the material, products or equipment tested within seven (7) calendar days of receipt of the report.

2. Training:

The Consultant shall include in the specification that the Contractor shall schedule and coordinate all equipment training with the Project Manager and Client Agency representatives. It shall state that the Contractor shall submit the Operation and Maintenance (O&M) manuals, training plan contents, and training durations to the Consultant, Project Manager and Client Agency Representative for review and approval prior to the training session.

The Consultant shall ensure that the training session is video recorded by the Contractor. A copy of the recording shall be transmitted to the Project Manager on compact disk who will forward the material to the Client Agency for future reference.

All costs associated with the training sessions shall be borne by the Contractor installing the equipment. A signed letter shall be prepared stating when the training was completed and must be accompanied with the training session sign-in sheet as part of the project close-out package.

3. Operation & Maintenance Manuals:

The Consultant shall coordinate and review the preparation and issuance of the equipment manuals provided by the Contractor(s) ensuring that they contain the operating procedures, maintenance procedures and frequency, cut sheets, parts lists, warranties, guarantees, and detailed drawings for all equipment installed at the facility.

A troubleshooting guide shall be included that lists problems that may arise, possible causes with solutions, and criteria for deciding when equipment shall be repaired and when it must be replaced.

Include a list of the manufacturer's recommended spare parts for all equipment being supplied for this project.

A list of names, addresses and telephone numbers of the Contractors involved in the installations and firms capable of performing services for each mechanical item shall be included. The content of the manuals shall be reviewed and approved by the Project Manager and Client Agency Representative.

The Consultant shall include in the specification that the Contractor must provide a minimum of ten (10) "throwaway" copies of the manual for use at the training seminar and seven (7) hardbound copies as part of the project close-out package.

4. Attic Stock:

The Consultant shall determine and recommend whether "attic stock" should be included for all aspects of the project. If required, the Consultant shall specify attic stock items to be included in the project.

Prior to project close-out, the Consultant must prepare a comprehensive listing of all items for delivery by the Contractor to the Owner and in accordance with the appropriate specification/plan section. Items shall include, but not be limited to: training sessions, O&M manuals, as-built drawings, itemized attic stock requirements, and manufacturer guarantees/warranties.

N. CHANGE ORDERS

The Consultant shall review and process all change orders in accordance with the contract documents and procedures described below.

1. Consultant:

The Consultant shall prepare a detailed request for Change Order including a detailed description of the change(s) along with appropriate drawings, specifications, and related documentation and submit the information to the Contractor for the change order request submission. This will require the use of the current DPMC 9b form.

2. Contractor:

The Contractor shall submit a DPMC 9b Change Order Request form to the Project Manager within seven (7) calendar days after receiving the Change Order from the Consultant. The

document shall identify the changed work in a manner that will allow a clear understanding of the necessity for the change. Copies of the original design drawings, sketches, etc. and specification pages shall be highlighted to clarify and show entitlement to the Change Order.

Copies shall be provided of job minutes or correspondence with all relative information highlighted to show the origin of the Change Order. Supplementary drawings from the Consultant shall be included if applicable that indicate the manner to be used to complete the changed work. A detailed breakdown of all costs associated with the change, i.e. material, labor, equipment, overhead, Sub-Contractor work, profit and bond, and certification of increased bond shall be provided.

If the Change Order will impact the time of the project, the Contractor shall include a request for an extension of time. This request shall include a copy of the original approved project schedule and a proposed revised schedule that reflects the impact on the project completion date. Documentation to account for the added time requested shall be included to support entitlement of the request such as additional work, weather, other Contractors, etc. This documentation shall contain dates, weather data and all other relative information.

3. Recommendation for Approval:

The Consultant shall evaluate the reason for the change in work and provide a detailed written recommendation for approval or disapproval of the Change Order Request including backup documentation of costs in CSI format and all other considerations to substantiate that decision.

4. Code Review:

The Consultant shall determine if the Change Order request will require Code review and shall submit six (6) sets of signed and sealed modified drawings and specifications to the DPMC Plan & Code Review Unit for approval, if required. The Consultant must also determine and produce a permit amendment request if required.

5. Cost Estimate:

The Consultant shall provide a detailed cost estimate of the proposed Change Order Request, as submitted by the Contractor, in CSI format (latest edition) for all appropriate divisions and sub-divisions using a recognized estimating formula. The estimate shall then be compared with that of the Contractor's estimate. If any line item in the Consultant's estimate is lower than the corresponding line item in the Contractor's estimate, the Consultant in conjunction with the Project Manager is to contact the Contractor by telephone and negotiate the cost differences. The Consultant shall document the negotiated agreement on the Change Order Request form. If the Contractor's total dollar value changes based on the negotiations, the Consultant shall identify the changes on the Change Order Request form accordingly.

When recommending approval or disapproval of the change order, the Consultant shall be required to prepare and process a Change Order package that contains at a minimum the following documents:

- DPMC 9b Change Order Request
- DPMC 10 Consultant's Evaluation of Contractor's Change Order Request
- Consultant's Independent Detailed Cost Estimate
- Notes of Negotiations

6. Time Extension:

When a Change Order Request is submitted with both cost and time factors, the Consultant's independent cost estimate is to take into consideration time factors associated with the changed work. The Consultant is to compare their time element with that of the Contractor's time request and if there is a significant difference, the Consultant in conjunction with the Project Manager is to contact the Contractor by telephone and negotiate the difference.

When a Change Order Request is submitted for time only, the Consultant is to do an independent evaluation of the time extension request using a recognized scheduling formula.

Requests for extension of contract time must be done in accordance with the General Conditions Article 10.1 "Changes in the Work".

7. Submission:

The Consultant shall complete all of the DPMC Change Order Request forms provided and submit a completed package to the Project Manager with all appropriate backup documentation within seven (7) calendar days from receipt of the Contractor's change order request. The Consultant shall resubmit the package at no cost to the State if the change order package contents are deemed insufficient by the Project Manager.

8. Meetings:

The Consultant shall attend and actively participate at all administrative hearings or settlement conferences as may be called by Project Manager in connection with such Change Orders and provide minutes of those meetings to the Project Manager for distribution.

9. Consultant Fee:

All costs associated with the potential Contractor Change Order Requests shall be anticipated by the Consultant and included in the base bid of their fee proposal.

If the Client Agency Representative requests a scope change; and it is approved by the Project Manager, the Consultant may be entitled to be reimbursed through an amendment and in accordance with the requirements stated in paragraph 10.01 of this Scope of Work.

IX. PERMITS & APPROVALS

A. NJ UNIFORM CONSTRUCTION CODE PERMIT

The project construction documents must comply with the latest adopted edition of the NJ Uniform Construction Code (NJUCC).

The latest NJUCC Adopted Codes and Standards can be found at:

http://www.state.nj.us/dca/divisions/codes/codreg/

The Consultant shall complete the NJUCC permit application and all applicable technical sub-code sections with all technical site data required. The Agent section of the application and certification section of the building sub-code section shall be signed. These documents shall be forwarded to the DPMC Project Manager.

The Consultant may obtain copies of all NJUCC permit applications at the following website:

http://www.state.nj.us/dca/divisions/codes/forms/

All other required project permits shall be obtained and paid for by the Consultant in accordance with the procedures described in Paragraph IX.B.

1. Prior Approval Certification Letters:

The issuance of a construction permit for this project may be contingent upon acquiring various "prior approvals" as defined by N.J.A.C. 5:23-1.4. It is the Consultant's responsibility to determine which prior approvals, if any, are required. The Consultant shall submit a general certification letter to the DPMC Plan & Code Review Unit Manager during the Permit Phase of this project that certifies all required prior approvals have been obtained.

In addition to the general certification letter discussed above, the following specific prior approval certification letters, where applicable, shall be submitted by the Consultant to the DPMC Plan & Code Review Unit Manager: Soil Erosion & Sediment Control, Water & Sewer Treatment Works Approval, Coastal Areas Facilities Review, Compliance of Underground Storage Tank Systems with N.J.A.C. 7:14B, Pinelands Commission, Highlands Council, Well Construction and Maintenance; Sealing of Abandoned Wells with N.J.A.C. 7:9D, Certification that all utilities have been disconnected from structures to be demolished, Board of Health

Approval for Potable Water Wells, Health Department Approval for Septic Systems. It shall be noted that in accordance with N.J.A.C. 5:23-2.15(a)5, a permit cannot be issued until the letter(s) of certification is received.

2. Multi-building or Multi-site Permits:

A project that involves many buildings and/or sites requires that a separate permit shall be issued for each building or site. The Consultant must determine the construction cost estimate for *each* building and/or site location and submit that amount where indicated on the permit application.

3. Special Inspections:

In accordance with the requirements of the New Jersey Uniform Construction Code N.J.A.C. 5:23-2.20(b), Bulletin 03-5 and Chapter 17 of the International Building Code, the Consultant shall be responsible for the coordination of all special inspections during the construction phase of the project.

Bulletin 03-5 can be found at:

http://www.state.nj.us/dca/divisions/codes/publications/pdf_bulletins/b_03_5.pdf

a. Definition:

Special inspections are defined as an independent verification by a certified Special Inspector for **Class I buildings and smoke control systems in any class building**. The special inspector is to be independent from the Contractor and responsible to the Consultant so that there is no possible conflict of interest.

Special inspectors shall be certified in accordance with the requirements in the New Jersey Uniform Construction Code.

b. Responsibilities:

The Consultant shall submit with the permit application, a list of special inspections and the agencies or special inspectors that will be responsible to carry out the inspections required for the project. The list shall be a separate document, on letter head, signed and sealed.

B. OTHER REGULATORY AGENCY PERMITS, CERTIFICATES AND APPROVALS

The Consultant shall identify and obtain all other State Regulatory Agency permits, certificates, and approvals that will govern and affect the work described in this Scope of Work. An itemized list of these permits, certificates, and approvals shall be included with the Consultant's Technical

Proposal and the total amount of the application fees should be entered in the Fee Proposal line item entitled, **"Permit Fee Allowance."**

The Consultant may refer to the Division of Property Management and Construction "Procedures for Architects and Engineers Manual", Section 6.4.8, which presents a compendium of State permits, certificates, and approvals that may be required for this project.

The Consultant shall determine the appropriate phase of the project to submit the permit application(s) in order to meet the approved project milestone dates.

Where reference to an established industry standard is made, it shall be understood to mean the most recent edition of the standard unless otherwise noted. If an industry standard is found to be revoked, or should the standard have undergone substantial change or revision from the time that the Scope of Work was developed, the Consultant shall comply with the most recent edition of the standard.

C. STATE INSURANCE APPROVAL

The Consultant shall respond in writing to the FM Global Insurance Underwriter plan review comments through the DPMC Plan & Code Review Unit Manager as applicable. The Consultant shall review all the comments and, with agreement of the Project Team, modify the documents while adhering to the project's SOW requirements, State code requirements, schedule, budget, and Consultant fee.

D. PUBLIC EMPLOYEES OCCUPATIONAL SAFETY & HEALTH PROGRAM

A paragraph shall be included in the design documents, if applicable to this project that states: The Contractor shall comply with all the requirements stipulated in the Public Employees Occupational Safety & Health Program (PEOSHA) document, paragraph 12:100-13.5 entitled "Air quality during renovation and remodeling". The Contractor shall submit a plan demonstrating the measures to be utilized to confine the dust, debris, and air contaminants in the renovation or construction area of the project site to the Project Team prior to the start of construction.

The link to the document is:

http://www.nj.gov/health/workplacehealthandsafety/peosh/peosh-health-standards/iaq.shtml

E. PERMIT MEETINGS

The Consultant shall attend and chair all meetings with Permitting Agencies necessary to explain and obtain the required permits.

F. MANDATORY NOTIFICATIONS

The Consultant shall include language in Division 1 of the specification that states the Contractor shall assure compliance with the New Jersey "One Call" Program (1-800-272-1000) if any excavation is to occur at the project site.

The One Call Program is known as the "New Jersey Underground Facility Protection Act", refer to N.J.A.C. 14:2.

G. CONSULTANT FEE

The Consultant shall determine the efforts required to complete and submit all permit applications, obtain and prepare supporting documentation, attend meetings, etc., and include the total cost in the base bid of their fee proposal under the "Permit Phase".

X. GENERAL REQUIREMENTS

A. SCOPE CHANGES

The Consultant must request any changes to this Scope of Work in writing. An approved DPMC 9d Consultant Amendment Request form reflecting authorized scope changes must be received by the Consultant prior to undertaking any additional work. The DPMC 9d form must be approved and signed by the Director of DPMC and written authorization issued from the Project Manager prior to any work being performed by the Consultant. Any work performed without the executed DPMC 9d form is done at the Consultant's own financial risk.

B. ERRORS AND OMISSIONS

The errors and omissions curve and the corresponding sections of the "Procedures for Architects and Engineers Manual" are eliminated. All claims for errors and omissions will be pursued by the State on an individual basis. The State will review each error or omission with the Consultant and determine the actual amount of damages, if any, resulting from each negligent act, error or omission.

C. ENERGY INCENTIVE PROGRAM

The Consultant shall review the programs described on the "New Jersey's Clean Energy Program" website at: http://www.njcleanenergy.com to determine if any proposed upgrades to the mechanical and/or electrical equipment and systems for this project qualify for "New Jersey Clean Energy Program" rebates and incentives such as SmartStart, Pay4Performance, Direct Install or any other incentives.

The Consultant shall be responsible to complete the appropriate registration forms and applications, provide any applicable worksheets, manufacturer's specification sheets, calculations, attend meetings, and participate in all activities with designated representatives of the programs and utility companies to obtain the entitled financial incentives and rebates for this project. All costs associated with this work shall be estimated by the Consultant and the amount included in the base bid of their fee proposal.

XI. ALLOWANCES

A. PERMIT FEE ALLOWANCE

The Consultant shall obtain and pay for all of the project permits in accordance with the guidelines identified below.

1. Permits:

The Consultant shall determine the various permits, certificates, and approvals required to complete this project.

2. Permit Costs:

The Consultant shall estimate the application fee costs for all of the required project permits, certificates, and approvals (excluding the NJ Uniform Construction Code permit) and include that amount in their fee proposal line item entitled **"Permit Fee Allowance"**, refer to Paragraph IX.A. A breakdown of each permit and application fee shall be attached to the fee proposal for reference.

NOTE: The NJ Uniform Construction Code permit is excluded since it will be paid for by the Contractor.

3. Applications:

The Consultant shall complete and submit all permit applications to the appropriate permitting authorities and the costs shall be paid from the Consultant's permit fee allowance. A copy of the

application(s) and the original permit(s) obtained by the Consultant shall be given to the DPMC Project Manager for distribution during construction.

4. Consultant Fee:

The Consultant shall determine what is required to complete and submit the permit applications, obtain supporting documentation, attend meetings, etc., and include the total cost in the base bid of their fee proposal under the "Permit Phase" column.

Any funds remaining in the permit allowance will be returned to the State at the close of the project.

XII. SUBMITTAL REQUIREMENTS

A. CONTRACT DELIVERABLES

All submissions shall include the Contract Deliverables identified in Section XIV of this Scope of Work and described in the DPMC Procedures for Architects and Engineers Manual.

B. CATALOG CUTS

The Consultant shall provide catalog cuts as required by the DPMC Plan & Code Review Unit during the design document review submissions. Examples of catalog cuts include, but are not limited to: mechanical equipment, hardware devices, plumbing fixtures, fire suppression and alarm components, specialized building materials, electrical devices, etc.

C. PROJECT DOCUMENT BOOKLET

The Consultant shall submit all of the required Contract Deliverables to the Project Manager at the completion of each phase of the project. All reports, meeting minutes, plan review comments, project schedule, cost estimate in CSI format (2004 Edition), correspondence, calculations, and other appropriate items identified on the Submission Checklist form provided in the A/E Manual shall be presented in an 8½" x 11" bound "booklet" format.

D. DESIGN DOCUMENT CHANGES

Any corrections, additions, or omissions made to the submitted drawings and specifications at the Permit Phase of the project must be submitted to DPMC Plan & Code Review Unit as a complete document. Corrected pages or drawings may not be submitted separately unless the Consultant inserts the changed page or drawing in the original documents. No Addendums or Bulletins will be accepted as a substitution to the original specification page or drawing.

E. SINGLE-PRIME CONTRACT

All references to "separate contracts" in the Procedures for Architects and Engineers Manual, Chapter 8, shall be deleted since this project will be advertised as a "Single Bid" (Lump Sum All Trades) contract. The single prime Contractor will be responsible for all work identified in the drawings and specifications.

The drawings shall have the required prefix designations and the specification sections shall have the color codes as specified for each trade in the DPMC Procedure for Architects and Engineers Manual.

The Consultant must still develop the Construction Cost Estimate (CCE) for each trade and the amount shall be included on the DPMC-38 Project Cost Analysis form where indicated. This document shall be submitted at each design phase of the project and updated immediately prior to the advertisement to bid.

XIII. SOW SIGNATURE APPROVAL SHEET

This Scope of Work shall not be considered a valid document unless all signatures appear in each designated area below.

The Client Agency approval signature on this page indicates that they have reviewed the design criteria and construction schedule described in this project Scope of Work and verifies that the work will not conflict with the existing or future construction activities of other projects at the site.

SOW PREPARED BY: _____ 6-4-20
GREGORY SYMCAK, PROJECT MANAGER — DATE
DPMC PROJECT PLANNING & INITIATION

SOW APPROVED BY: _____ 6/5/20
PERRY STALTER, PROJECT MANAGER — DATE
CLIENT AGENCY REPRESENTATIVE

SOW APPROVED BY: _____ 06/22/2020
RONALD KRAEMER, DESIGN PROJECT MANAGER — DATE
DPMC PROJECT MANAGEMENT GROUP

SOW APPROVED BY: _____ 6/30/20
RICHARD FLODMAND, DEPUTY DIRECTOR — DATE
DIV PROPERTY MGT & CONSTRUCTION

XIV. CONTRACT DELIVERABLES

The following is a listing of Contract Deliverables that are required at the completion of each phase of this project. The Consultant shall refer to the DPMC publication entitled, "Procedures for Architects and Engineers," Volumes I and II, 2nd Edition, dated January, 1991 to obtain a more detailed description of the deliverables required for each item listed below.

The numbering system used in this "Contract Deliverables" section of the scope of work corresponds to the numbering system used in the "Procedures for Architects and Engineers" manual and some may have been deleted if they do not apply to this project.

DESIGN DEVELOPMENT PHASE: 50% Complete Design Documents (Minimum)

7.1 Project Schedule (Update Bar Chart Schedule)

7.2 Meetings & Minutes (Minutes within seven (7) calendar days of meeting)

7.3 Correspondence

7.4 Submission Requirements

7.4.1 A/E Statement of Site Visit, As-Built Drawing Verification (if available)
7.4.2 Space Analysis & Program Requirements (if changed from Schematic Phase)
7.4.3 Special Features Description: communications, security, fire protection, special structural features, etc.
7.4.4 Site Evaluation
7.4.7 Design Rendering/Sketches
7.4.8 Regulatory Agency Approvals (See Section 6.4.8 for listing)
7.4.9 Confirm Utility Availability (On Site & Public)
Fire Service
Electric Service
Telephone Service
Tank Locations & Sizes
7.4.10 Drawings: 6 sets
Cover Sheet (See A/E Manual for format)
Site Plan
Site Utility Plan
Floor Plans
Elevations
Sections/Details

Structural Drawings, Seismic Design Load Criteria
Economic Comparison of Proposed vs. Alternate Fueled System
Electrical Drawings, Riser Diagram, Panel Schedules, Service Size, Lighting Design
Emergency Power Equipment & Source

7.4.11 Specifications: 6 sets (See A/E Manual for format, include Division 1 and edit to describe the administrative and general requirements of the project)
7.4.12 Current Working Estimate in CSI Format & Cost Analysis 38 Form
7.4.13 Bar Chart of Design and Construction Schedule
7.4.14 Oral Presentation of Submission to Project Team
7.4.15 SOW Compliance Statement
7.4.16 This Submission Checklist (See A/E Manual, Figure 6.4.16 for format)
7.4.17 Deliverables Submission in Booklet Form: 7 sets

7.5 Approval

7.5.1 Respond to Submission Comments

7.6 Submission Forms

Figure 7.4.12 Current Working Estimate/Cost Analysis
Figure 7.4.16 Submission Checklist

FINAL DESIGN PHASE 100% Complete Construction Documents

This Final Design Phase may require more than one submission based on the technical quality and code conformance of the design documents.

8.1 Schedule (Update Bar Chart Schedule)

8.2 Meeting & Minutes (Minutes within seven (7) calendar days of meeting)

8.3 Correspondence

8.4 Submission Requirements

8.4.1 A/E Statement of Site Visit
8.4.2 Space Analysis
8.4.3 Special Features Description, Communication/Security/Fire/Smoke/Exhaust)
8.4.4 Site Evaluation
8.4.7 Framed Rendering and Photographs
8.4.8 Regulatory Agency Approvals (Include itemized list specific to this project)
8.4.10 Drawings: 6 sets

8.4.11 Specifications: 6 sets
8.4.12 Current Working Estimate in CSI Format & Cost Analysis 38 Form
8.4.13 Bar Chart of Design and Construction Schedule
8.4.14 Oral Presentation of this Submission to Project Team
8.4.15 Plan Review/SOW Compliance Statement
8.4.16 This Submission Checklist
8.4.17 Deliverables Submission in Booklet Form: 7 sets

8.5 Approvals

8.5.1 Respond to Submission Comments

PERMIT APPLICATION PHASE

This Permit Application Phase should not include any additional design issues. Design documents shall be 100% complete at the Final Design Phase.

8.6 Permit Application Submission Requirements

8.6.1 - 8.6.7: If all of the deliverables of these sections have been previously submitted to DPMC and approved there are no further deliverables due at this time
8.6.8 Regulatory Agency Approvals
(a) UCC Permit Application & Technical Sub-codes completed by A/E
8.6.9 Utility Availability Confirmation
8.6.10 Signed and Sealed Drawings: 6 sets
8.6.11 Signed and Sealed Specifications: 6 sets
8.6.12 Current Working Estimate/Cost Analysis
8.6.13 Bar Chart Schedule
8.6.14 Project Presentation (N/A this Project)
8.6.15 Plan Review/SOW Compliance Statement
8/6.16 Submission Checklist

8.7 Approvals

8.8 Submission Forms

Figure 8.4.12 Current Working Estimate/Cost Analysis
Figure 8.4.16 Submission Checklist (Final Review Phase)
Figure 8.6.12-b Bid Proposal Form (Form DPMC -3)
Figure 8.6.12-c Notice of Advertising (Form DPMC -31)
Figure 8.6.16 Submission Checklist (Permit Phase)
Figure 8.7 Bid Clearance Form (Form DPMC -601)

BIDDING AND CONTRACT AWARD

9.0 Bidding Phase Requirements

9.01 Original Drawings signed & sealed by A/E and drawings on compact disk (CD) in *Adobe Portable Document Format (*.pdf)
9.02 One Unbound Specification Color Coded per A/E Manual Section 8.4.11 and specifications on compact disk (CD) in *Adobe Portable Document Format (*.pdf)
` 9.03 Bid Documents Checklist
9.04 Bid Proposal Form
9.05 Notice for Advertising

9.1 Chair Pre-Bid Conference/Mandatory Site Visit

9.2 Prepare Bulletins

9.3 Attend Bid Opening

9.4 Recommendation for Contract Award

9.4.1 Prepare Letter of Recommendation for Award & Cost Analysis

9.5 Attend Pre-Construction Meeting

9.6 Submission Checklist

9.7 Submission Forms

Figure 9.4.1 Cost Analysis
Figure 9.6 Submission Checklist

CONSTRUCTION PHASE

10.1 Site Construction Administration

10.2 Pre-Construction Meeting

10.3 Construction Job Meetings

10.3.1 Agenda: Schedule and Chair Construction Job Meetings
10.3.2 Minutes: Prepare and Distribute Minutes within 5 working days of meeting
10.3.3 Schedules; Approve Contractors' Schedule & Update

10.3.4 Minutes Format: Prepare Job Meeting Minutes in approved format, figure 10.3.4-a

10.4 Correspondence

10.5 Prepare and Deliver Conformed Drawings

10.7 Approve Contractors Invoicing and Payment Process

10.8 Approve Contractors 12/13 Form for Subs, Samples and Materials

10.10 Approve Test Reports

10.11 Approve Shop Drawings

10.12 Construction Progress Schedule

10.12.1 Construction Progress Schedule
10.12.2 CPM Consultant

10.13 Review & Recommend or Reject Change Orders

10.13.1 Scope Changes
10.13.2 Construction Change Orders
10.13.3 Field Changes

10.14 Construction Photographs

10.15 Submit Field Observation Reports

10.16 Submission Forms

Figure 10.3.4-a Job Meeting Format of Minutes
Figure 10.3.4-b Field Report
Figure 10.6 DPMC Insurance Form-24
Figure 10.6-a Unit Schedule Breakdown
Figure 10.6-b Monthly Estimate for Payment to Contractor DPMC 11-2
Figure 10.6-c Monthly Estimate for Payment to Contractor DPMC 11-2A
Figure 10.6-d Invoice DPMC 11
Figure 10.6-e Prime Contractor Summary of Stored Materials DPMC 11-3
Figure 10.6-f Agreement & Bill of Sale certificate for Stored Materials DPMC 3A
Figure 10.7-a Approval Form for Subs, Samples & Materials DPMC 12
Figure 10.7-b Request for Change Order DPMC 9b

Figure 10.9 Transmittal Form DPMC 13
Figure 10.10 Submission Checklist

PROJECT CLOSE-OUT PHASE

11.1 Responsibilities: Plan, Schedule and Execute Close-Out Activities

11.2 Commencement: Initiate Close-Out w/DPMC 20A Project Close-Out Form

11.3 Develop Punch List & Inspection Reports

11.4 Verify Correction of Punch List Items

11.5 Determination of Substantial Completion

11.6 Ensure Issuance of "Temporary Certificate of Occupancy or Approval"

11.7 Initiation of Final Contract Acceptance Process

11.8 Submission of Close-Out Documentation

11.8.1 As-Built & Record Set Drawings, 3 sets AUTOCAD Discs Delivered to DPMC
11.8.2 (a) Maintenance and Operating manuals, Warranties, etc.: 7 sets each
(b) Guarantees
(c) Testing and Balancing Reports
(d) Shop Drawings
(e) Letter of Contract Performance
11.8.3 Final Cost Analysis-Insurance Transfer DPMC 25
11.8.4 This Submission Checklist

11.9 Final Payment

11.9.1 Contractors Final Payment
11.9.2 A/E Invoice and Close-Out Forms for Final Payment

11.10 Final Performance Evaluation of the A/E and the Contractors

11.11 Ensure Issuance of a "Certificate of Occupancy or Approval"

11.12 Submission Forms

Figure 11.2 Project Close-Out Documentation List DPMC 20A
Figure 11.3-a Certificate of Substantial Completion DPMC 20D

Figure 11.3-b	Final Acceptance of Consultant Contract DPMC 20C
Figure 11.5	Request for Contract Transition Close-Out DPMC 20X
Figure 11.7	Final Contract Acceptance Form DPMC 20
Figure 11.8.3-a	Final Cost Analysis
Figure 11.8.3-b	Insurance Transfer Form DPMC 25
Figure 11.8.4	Submission Checklist

XV.EXHIBITS

The attached exhibits in this section will include a sample project schedule, and any supporting documentation to assist the Consultant in the design of the project such as maps, drawings, photographs, floor plans, studies, reports, etc.

END OF SCOPE OF WORK

February 7, 1997
Rev.: January 29, 2002

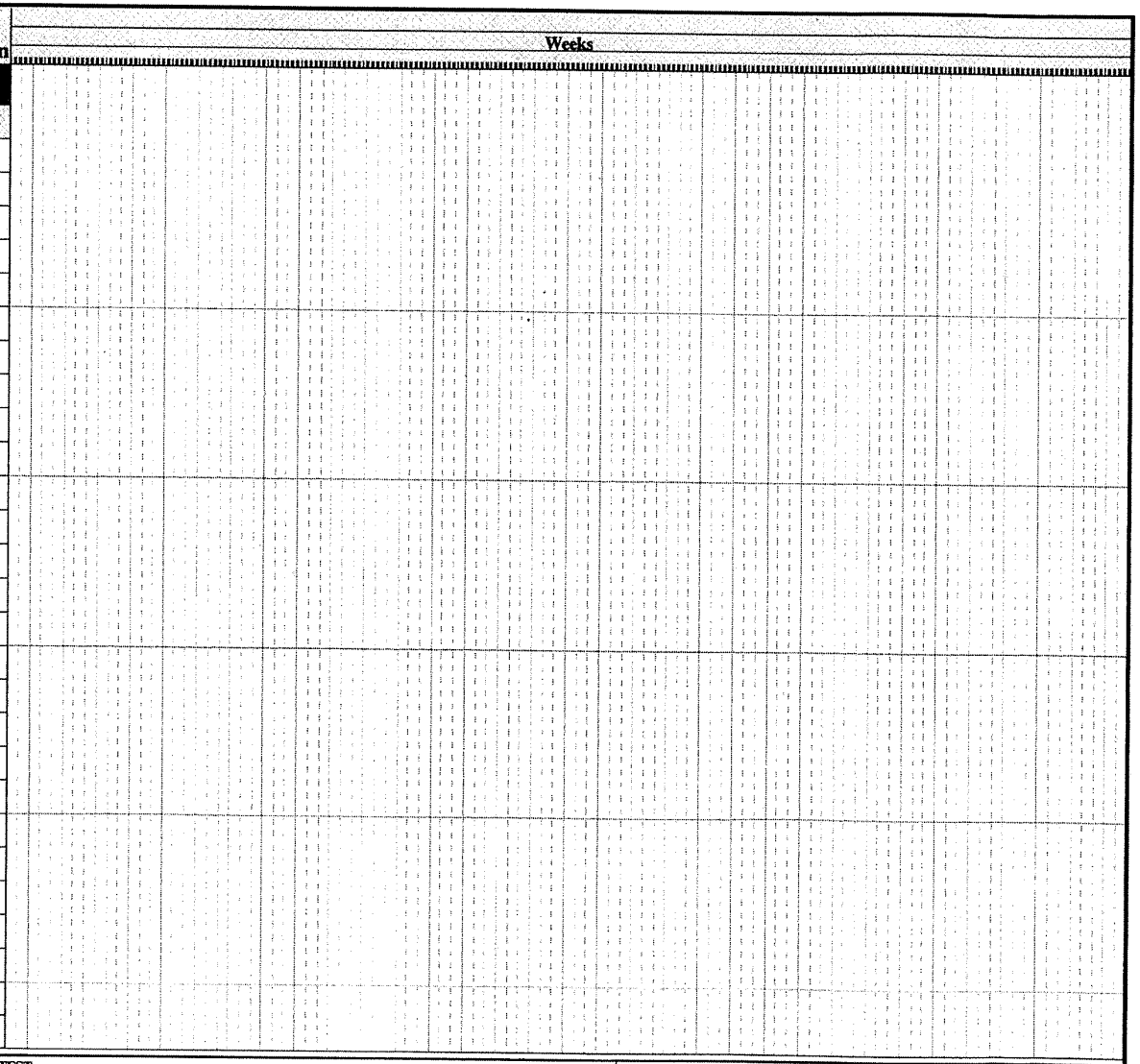
Responsible Group Code Table

The codes below are used in the schedule field "GRP" that identifies the group responsible for the activity. The table consists of groups in the Division of Property Management & Construction (DPMC), as well as groups outside of the DPMC that have responsibility for specific activities on a project that could delay the project if not completed in the time specified. For reporting purposes, the groups within the DPMC have been defined to the supervisory level of management (i.e., third level of management, the level below the Associate Director) to identify the "functional group" responsible for the activity.

CODE	DESCRIPTION	REPORTS TO ASSOCIATE DIRECTOR OF:
CM	Contract Management Group	Contract Management
CA	Client Agency	N/A
CSP	Consultant Selection and Prequalification Group	Technical Services
A/E	Architect/Engineer	N/A
PR	Plan Review Group	Technical Services
CP	Construction Procurement	Planning & Administration
CON	Construction Contractor	N/A
FM	Financial Management Group	Planning & Administration
OEU	Office of Energy and Utility Management	N/A
PD	Project Development Group	Planning & Administration

EXHIBIT 'A'

Activity ID	Description	Rspn
<PROJ>		
Design		
CV3001	Schedule/Conduct Predesign/Project Kick-Off Mtg.	CM
CV3020	Prepare Program Phase Submittal	AE
CV3021	Distribute Program Submittal for Review	CM
CV3027	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3022	Review & Approve Program Submittal	CA
CV3023	Review & Approve Program Submittal	PR
CV3024	Review & Approve Program Submittal	CM
CV3025	Consolidate & Return Program Submittal Comments	CM
CV3030	Prepare Schematic Phase Submittal	AE
CV3031	Distribute Schematic Submittal for Review	CM
CV3037	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3032	Review & Approve Schematic Submittal	CA
CV3033	Review & Approve Schematic Submittal	PR
CV3034	Review & Approve Schematic Submittal	CM
CV3035	Consolidate & Return Schematic Submittal Comment	CM
CV3040	Prepare Design Development Phase Submittal	AE
CV3041	Distribute D. D. Submittal for Review	CM
CV3047	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3042	Review & Approve Design Development Submittal	CA
CV3043	Review & Approve Design Development Submittal	PR
CV3044	Review & Approve Design Development Submittal	CM
CV3045	Consolidate & Return D.D. Submittal Comments	CM
CV3050	Prepare Final Design Phase Submittal	AE
CV3051	Distribute Final Design Submittal for Review	CM
CV3052	Review & Approve Final Design Submittal	CA
CV3053	Review & Approve Final Design Submittal	PR
CV3054	Review Final Design Submitl for Constructability	OCS



NOTE:
Refer to section "IV Project Schedule" of the Scope of Work for contract phase durations.

DBCA - TEST

Sheet 1 of 3

Bureau of Design & Construction Services
Routine Project

Exhibit "A"

Activity ID	Description	Rspn	Weeks
CV3055	Review & Approve Final Design Submittal	CM	
CV3056	Consolidate & Return Final Design Comments	CM	
CV3060	Prepare & Submit Permit Application Documents	AE	
CV3068	Prepare & Submit Bidding Cost Analysis (DPMC-38)	CM	
Plan Review-Permit Acquisition			
CV4001	Review Constr. Documents & Secure UCC Permit	PR	
CV4010	Provide Funding for Construction Contracts	CA	
CV4020	Secure Bid Clearance	CM	
Advertise-Bid-Award			
CV5001	Advertise Project & Bid Construction Contracts	CP	
CV5010	Open Construction Bids	CP	
CV5011	Evaluate Bids & Prep. Recommendation for Award	CM	
CV5012	Evaluate Bids & Prep. Recommendation for Award	AE	
CV5014	Complete Recommendation for Award	CP	
CV5020	Award Construction Contracts/Issue NTP	CP	
Construction			
CV6000	Project Construction Start/Issue NTP	CM	
CV6001	Contract Start/Contract Work (25%) Complete	CON	
CV6002	Preconstruction Meeting	CM	
CV6003	Begin Preconstruction Submittals	CON	
CV6004	Longest Lead Procurement Item Ordered	CON	
CV6005	Lead Time for Longest Lead Procurement Item	CON	
CV6006	Prepare & Submit Shop Drawings	CON	
CV6007	Complete Construction Submittals	CON	
CV6011	Roughing Work Start	CON	
CV6012	Perform Roughing Work	CON	
CV6010	Contract Work (50%+) Complete	CON	
CV6013	Longest Lead Procurement Item Delivered	CON	
CV6020	Contract Work (75%) Complete	CON	

NOTE:
Refer to section "IV Project Schedule" of the Scope of Work for contract phase durations.

DBCA - TEST

Sheet 2 of 3

Bureau of Design & Construction Services
Routine Project

Exhibit "A"

Activity ID	Description	Rspn	Weeks
CV6014	Roughing Work Complete	CON	
CV6021	Interior Finishes Start	CON	
CV6022	Install Interior Finishes	CON	
CV6030	Contract Work to Substantial Completion	CON	
CV6031	Substantial Completion Declared	CM	
CV6075	Complete Deferred Punch List/Seasonal Activities	CON	
CV6079	Project Construction Complete	CM	
CV6080	Close Out Construction Contracts	CM	
CV6089	Construction Contracts Complete	CM	
CV6090	Close Out A/E Contract	CM	
CV6092	Project Completion Declared	CM	

NOTE:
Refer to section "IV Project Schedule" of the Scope of Work for contract phase durations.

DBCA - TEST

Sheet 3 of 3

Bureau of Design & Construction Services
Routine Project

Exhibit "A"

bing maps

245 Market St, Trenton, NJ 08611
Location: 40.215469609715214, -74.76230628964376

Type your notes here.

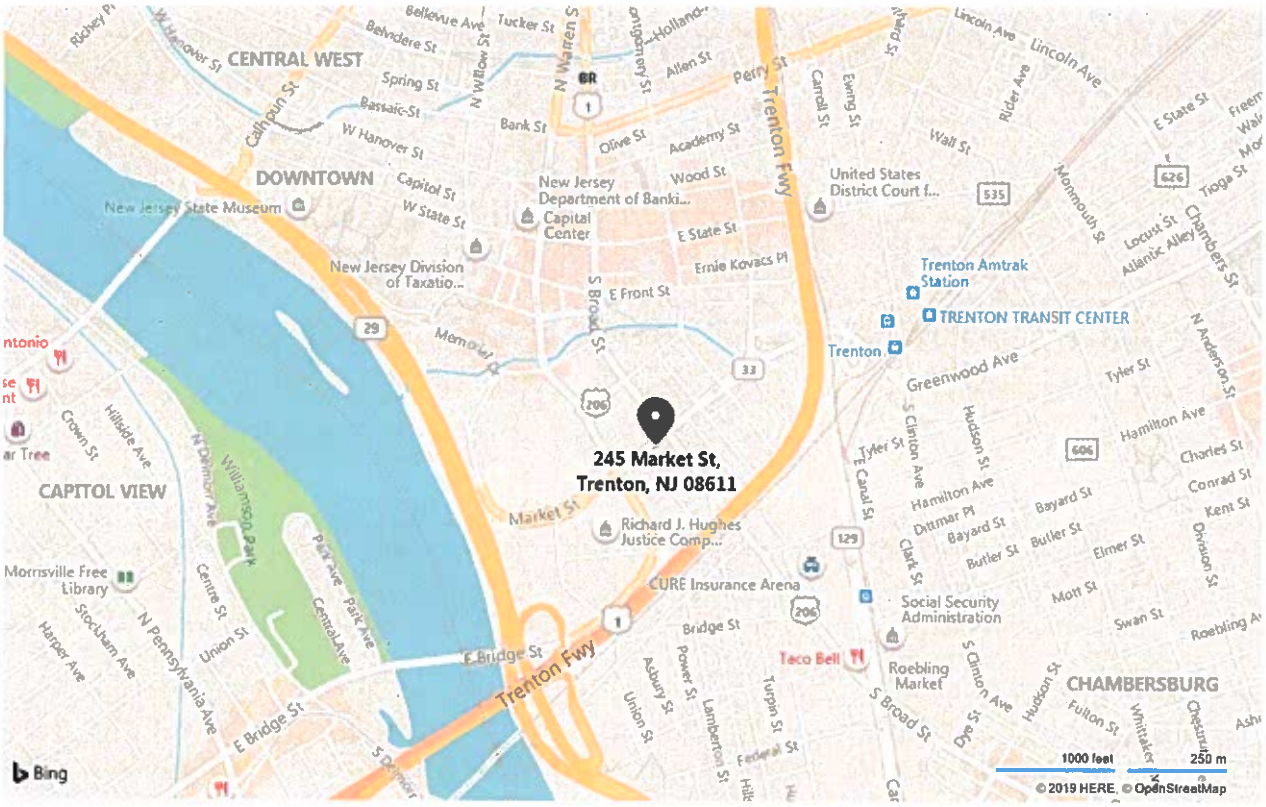


EXHIBIT 'B'
PROJECT SITE LOCATION

EXHIBIT 'C'
JUSTICE COMPLEX

FEASIBILITY REPORT

GENERATOR AND CONTROLS UPGRADES
at the
RICHARD J. HUGHES JUSTICE COMPLEX
25 Market Street, Trenton, NJ

DPMC PROJECT NO. A1296-00

STATE OF NEW JERSEY
Honorable Phil Murphy, Governor
Honorable Sheila Oliver, Lt. Governor

DEPARTMENT OF THE TREASURY
Elizabeth Maher Muoio, State Treasurer

DIVISION OF PROPERTY MANAGEMENT
AND CONSTRUCTION
Christopher Chianese, Director

Prepared By:
HOLSTEIN WHITE, INC.
210 E. Street Road, Suite 2D
Feasterville, PA 19053

HWI Project No.: 18-1150

May 17th, 2019

EXHIBIT 'D'
FEASIBILITY REPORT

Table of Contents

Section	Page No.
Purpose	3
Findings and Observations	
General	4
Existing Equipment	4
Code Compliance	5
Replacement Options	
Option 1 (Repair and reuse existing generators)	6
Option 2 (Replace generators)	7
General Requirements	9
Additional Benefits and Considerations	10
Recommendations	10

Appendices

1. Option 1 order of magnitude cost estimate
2. Option 2 order of magnitude cost estimate
3. Photographs
4. Trigen (Veolia) equipment summary
5. Highland Industrial Turbine Quote

Purpose

Holstein White, Inc. (HWI) has been contracted by the State of New Jersey Department of the Treasury Division of Property Management and Construction (DPMC) to provide the due diligence, investigation, and analysis necessary to evaluate the four (4) existing turbine generators, paralleling controls, emergency distribution switchboard, and unitized automatic transfer switches located in the emergency equipment room on the 9th floor of the Richard J. Hughes Justice Complex. The information presented herein includes a narrative of findings and observations related to the existing Generators. This contract engagement and scope of this report are limited to the generators, controls, and emergency distribution switchboard. All other normal and emergency distribution infrastructure with-in the building is not included in the scope of our contract or this report. All recommendations are based on HWI's observations, discussions with the building management, equipment vendors, and field reports provided under the current maintenance contract. An opinion of probable cost estimate for the repair and / or replacement of the equipment is included for planning purposes.

Findings and Observations

General

The Justice complex is the home of the New Jersey Judiciary, the Office of the Attorney General (OAG), and the Office of the Public Defender (OPD). On a typical day the building is occupied by thousands of employees and visitors. In addition, each of these agencies maintain and operate critical data centers that operate 24 hours, 7 days a week. These occupants and data centers rely on a robust onsite generator infrastructure to maintain operations and provide safe egress during a utility outage.

A failure of the emergency generators will result in an entire building power loss during a utility outage. Employees and visitors will need to navigate out of the building thru pitch black halls and stairs with no exit signs or emergency lighting. The fire pump will fail to start and will not pressurize the sprinkler system. Elevators will stop midflight trapping passengers. Fire alarm and security, and most access control systems will continue to operate on internal batteries and backup UPS systems but will fail once the batteries discharge.

The data centers have an additional redundant power feed maintained on the 9th floor by Veolia. This only provides power to the central UPS powering the data center along with chilled water pumps and backup chillers to cool these areas. The Veolia power supply is not guaranteed and if unavailable, the UPS system will provide approximately 20 minutes of battery run time before the data center equipment shuts down.

Existing Equipment

With the exception of the fuel system and distribution risers, all existing emergency power source and supply equipment is located in the north wing electrical room on the 9th floor. This area contains the existing generators, controls, and emergency distribution equipment.

Generators:
The building is currently backed by four (4) Onan 560kW / 700kVA diesel turbine generators. They are arranged in an N+1 operating configuration to allow for full operation during maintenance or failures of a single unit. These generators were installed in the early 1980's and are original to the building. In recent years a major failure has removed one unit from service. The failed unit has been facilitating parts to repair the remaining operational generators. Only six (6) of these generators were built by Onan, with four (4) being located in this building. The other two were also installed in State of NJ buildings. These units are obsolete and the manufacturer no longer supports these units. Parts are becoming increasingly difficult to obtain as evidenced by the parting out of the failed generator.

Fuel System:
The existing diesel storage day tank is located with-in the electric room. The generators draw fuel directly from the day tank during normal operation. A 10,000 gallon main tank is located underground near the intersections of New Warren and Market Streets. Fuel pumps are located in the P1 north mechanical room that pull from the underground tank and push the fuel up to the 9th floor day tank.

Paralleling Controls:
These generators are connected to the electrical infrastructure by motor operated circuit breakers in a paralleling switchboard also manufactured by Onan. This switchboard contains the Onan and Woodward PLC controls for paralleling and synchronization. These controls monitor and control the generator governors to synchronize each generator prior to closing on the bus. The controls use PLC logic and and close the breakers when compatible output characteristics are achieved. The controls are original to the building and have been maintained thru the years to keep the system operational. These controls are no longer manufactured and have been replaced by the manufacturer with more modern components. In addition, maintenance and repair technicians proficient with the existing infrastructure are becoming more difficult to find as the controls industry continues to modernize and drift away from the controls installed in this building.

Emergency Distribution Switchboard (EMDS):
Backup power is distributed by a 480/277 volt, 3 phase, 4 wire, Westinghouse switchboard. This switchboard is connected to the paralleling controls by a Westinghouse 4000 amp overhead bus. There is a 3200 amp main breaker along with two (2) distribution sections. The distribution breakers are motor operated and GFCI protected. The operators are controlled by the paralleling controls to shed load on a priority demand schedule. It is unknown at this time if the priority demand schedule is still active or if the motor operators are operational.

Automatic Transfer Switches:
At the end of the emergency distribution switchboard is a section of four (4) unitized transfer switches with an additional Onan transfer switch mounted to the end. Two (2) of the unitized transfer switches have failed along with the single switch on the end. These switches are installed in a custom enclosure that is not properly sized to accommodate replacement transfer switches. These switches power emergency lighting, elevator, and other priority equipment. Due to the variety of failures, most of these switches must be manually transferred following a utility outage which increases the amount of time the lights remain out and occupants trapped in elevators.

Code Compliance

This is a high rise building that is required to maintain onsite generation to power life safety systems, emergency lighting, and the fire pump in accordance with the New Jersey Uniform Construction Code (NJ UCC), International Building Code (IBC), and National Fire Protection Association (NFPA). The most critical requirements are generator starting time and separation of emergency branches.

The generators are required to start and power the life safety loads (i.e. emergency lighting, exit signs, and fire alarm) with-in 10 seconds of utility loss. The existing generators were tested and timed during a previous project to determine how long from loss of utility to generators powering the equipment. Multiple tests confirmed that nearly 60 seconds passes before the existing generators are started and powering the equipment. This is well in excess of the 10 seconds required by the Life Safety Code.

In addition, each branch of the emergency system (life safety, legally required stand-by, and optional stand-by) are to be isolated by physical barriers with-in the distribution equipment and are to be powered by separate transfer switches and risers with-in the building. Currently proper separation is not maintained between life safety systems and stand-by. Single transfer switches power a blend of systems. Evaluating the separation of each of these systems is outside the scope of this report, but is something the building needs to address under a separate project. Dedicated life safety transfer switches should be installed along with a life safety riser in each wing of the building. These risers should power only emergency egress lighting and exit signs. All other equipment is considered stand-by and should be powered from a separate panel with a lower priority. The lower priority stand-by panels should be set to open first during a load shed event if the generator load is approaching the maximum threshold. Evaluation of the priority load shed should be included in the design phase of the project.

Replacement Options

Option 1 (Repair and reuse existing generators)

Note: This Option only addresses the failed turbine and outdated controls. It is not a long term solution to the emergency power system reliability. It should only be considered as a short term bridge to a complete generator replacement in the next 3-5 years. It is highly likely that a failed component on any of the existing generators will cause it to be unavailable for an extended period of time while aftermarket replacement parts are located.

DPMC Generator Controls Replacement Labor and Materials	
Work Description:	**Order of Magnitude Cost Estimate**
Generator Controls replacement	$570,000.00
Rebuild Turbine #3	$140,000.00
ATS equipment	$67,500.00
Emergency Switchboard	$275,000.00
Temporary Switchboard	$60,000.00
Veolia Monitoring	$50,000.00
Total	$1,162,500.00

Note: The estimate above represents a probable construction cost assuming all work is done immediately and should be adjusted for actual design specifications and inflation at the actual time of work. Projected costs indicated are based on current construction costs. The above reflects material and labor costs only. See Appendix 1 for a Current Working Estimate that includes estimated overhead, profit, design fees, DPMC management fees, contingencies, and permits. Escalation at a rate of 0.5% per month should be added from the date of this report to the start of construction. Final project cost will vary based on the cost of architecture and engineering services, design specifications, and material costs at the time of bid.

Option 1 includes the following repairs and replacements:

1. Repair of the existing Turbine Generators.
2. Replace existing Paralleling and Synchronization Controls.
3. Replace existing Emergency Distribution Switchboard.
4. Replace existing Unitized Transfer Switches.

Under option 1 the existing generators would be reused. Generator #3 would be rebuilt in accordance with the proposal provided by Highland Industrial Turbine Service, Inc. (See attached copy of quote in Appendix). This quote is dated 10-27-2017 and will need to be revised with updated pricing if this option is selected. This option should only be selected if the State intends to replace the generators in the near future (3-5 years). Parts are still difficult to source and repairs to the existing equipment will continue to be increasingly difficult.

The existing paralleling and Synchronization Controls shall be upgraded and replaced with new PLC controls. The new controls can be located on the wall adjacent to the existing controller to allow for a phased replacement while maintaining operation of the existing generators. In addition to the controls, the existing motor operated breakers in the paralleling gear shall be replaced with new. The new controls shall support load shed / add capabilities to allow life safety loads to be powered immediately upon availability of first generator. In addition, the controls shall allow the first generator available to close on the bus and bring the others online as they synchronize.

The existing emergency distribution switchboard shall be replaced with new. The new equipment shall be rated equal or exceed the existing. Provide new distribution breakers to match ratings of existing. The distribution breakers shall have GFCI protection and be motor operated. The motor operators shall be controlled by the new paralleling controls and shall engage breakers based on a priority load schedule. The priority load schedule shall be developed by the design consultant and approved by the building and local AHJ.

The existing unitized transfer switches shall be replaced with new individual transfer switches. These transfer switches shall mounted in place of the existing unitized equipment and shall be of equal or greater ratings.

Option 2 (Replace generators)

DPMC Generator Replacement Labor and Materials	
Work Description:	**Order of Magnitude Cost Estimate**
Controls replacement	$670,400.00
ATS equipment	$67,500.00
Emergency Switchboard	$329,600.00
Generators	$940,800.00
concrete pads	$25,000.00
structural reinforcement	$200,000.00
fuel system	$50,000.00
electrical feeds	$238,770.00
site repair	$20,000.00
Controls and monitoring integration	$30,000.00
Temporary Switchboard	$56,000.00
Veolia Monitoring	$50,000.00
Total	$2,678,070.00

Note: The estimate above represents a probable construction cost assuming all work is done immediately and should be adjusted for actual design specifications and inflation at the actual time of work. Projected costs indicated are based on current construction costs. The above reflects material and labor costs only. See Appendix 1 for a Current Working Estimate that includes estimated overhead, profit, design fees, DPMC management fees, contingencies, and permits. Escalation at a rate of 0.5% per month should be added from the date of this report to the start of construction. Final project cost will vary based on the cost of architecture and engineering services, design specifications, and material costs at the time of bid.

Option 2 includes replacement of the following components:

1. Generators
2. Paralleling and Synchronization Controls
3. Emergency Distribution Panel.
4. Transfer switches.

Under option 2 the existing generators are to be abandoned in place and new installed. Figure 2 below shows a proposed location for the new generators along with a potential riser location for the feeders. The generators and controls shall be located in one area and the emergency distribution switchboard located on the 9th floor to replace the existing equipment.

The new generators shall maintain a minimum of N+1 redundancy. The basis for this order of magnitude cost estimate is four (4) 600kW / 750kVA diesel generators. Generators shall be installed in an individual weatherproof enclosure with the highest available sound attenuation from the manufacturer, and shall include an 8 hour minimum sub-base tank. The existing fuel pump located in the P-1 North mechanical room shall be modified, relocated, or replaced as needed to move fuel from the existing 10,000 gallon in-ground tank to the new sub-base tanks.

Paralleling controls shall be located adjacent to the new generators. The controls shall be housed in a weatherproof switchboard and shall include a motor operated circuit breaker for termination of each generator feed on the parallel bus. These controls shall allow the first available generator to close on the bus with-in 10 seconds and engage the life safety loads. The other generators shall close when available. A priority load shed shall be programmed and the controls connected to the motor operated breakers in the new emergency distribution switchboard.

The existing emergency distribution switchboard shall be replaced with new. The new equipment shall be rated equal or exceed the existing. Provide new distribution breakers to match ratings of existing. The distribution breakers shall have GFCI protection and be motor operated. The motor operators shall be controlled by the new paralleling controls and shall engage breakers based on a priority load schedule. The priority load schedule shall be developed by the design consultant and approved by the building and local AHJ.

The existing unitized transfer switches shall be replaced with new individual transfer switches. These transfer switches shall be mounted in place of the existing unitized equipment and shall be of equal or greater ratings.

Prior to selecting the final generator size the consultant shall perform an exhaustive load study of the existing generators to verify the new generators adequately support the existing load. This study shall include the approximate spare capacity and shall be presented to the Owner prior to proceeding with the design.

Structural reinforcement shall be designed as needed to support the new generators above the parking garage. This reinforcement is recommended above the parking level deck to avoid impacting the interior height of the parking garage under the new generators. New walking grates shall be provided around the generators to infill the area between the new structural steel. Railings and access stairs shall be provided as needed. In addition, provide a new concrete walkway from the existing walkway to the generators. The walkway shall be sufficiently wide for personnel access and equipment service. These are only recommendations. The design consultant shall evaluate the reinforcement requirements and provide final recommendations based on the appropriate structural analysis and impact to building infrastructure.

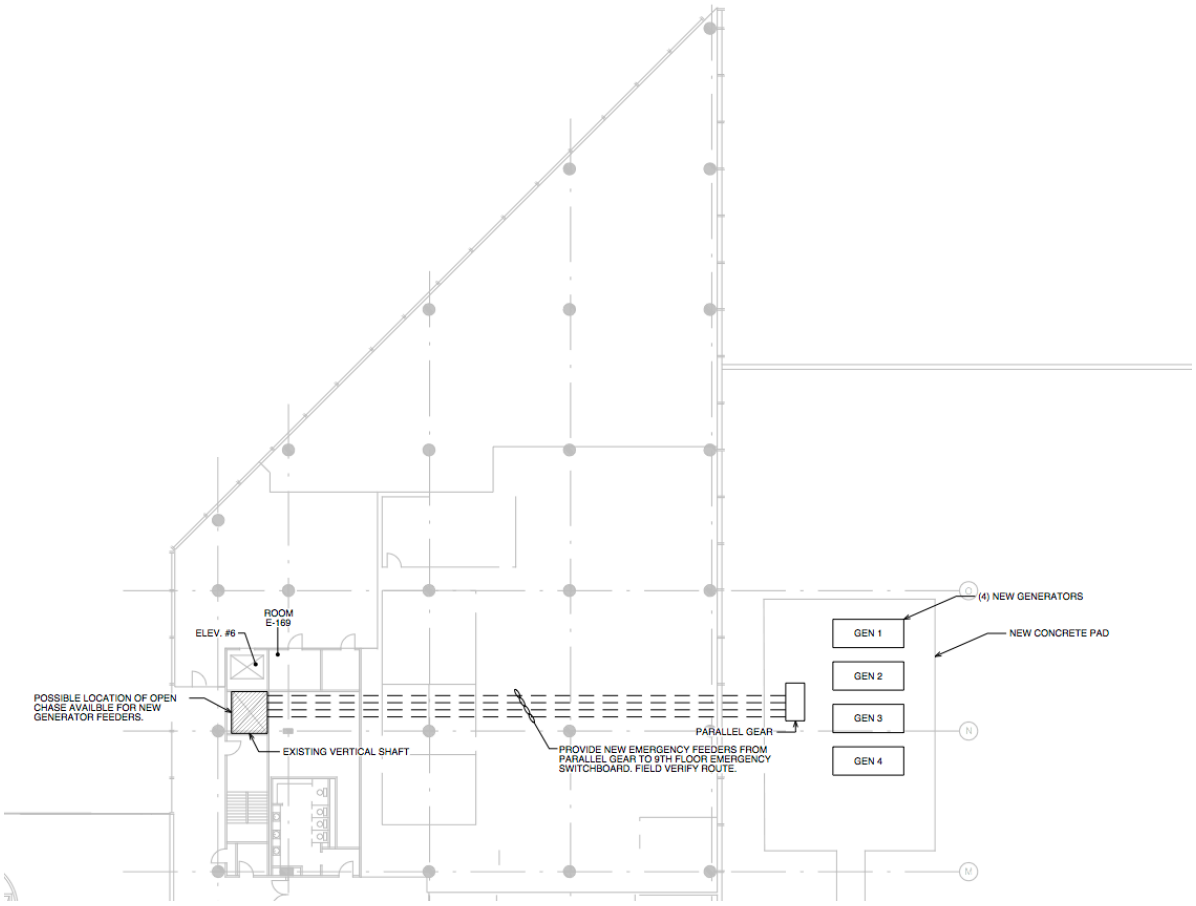


Figure 2 – Proposed generator equipment arrangement on roof of Parking Garage

General Requirements

The following is applicable All new equipment shall have monitoring and controls integral to the equipment. The equipment shall provide a ModBus or other suitable communications link for remote monitoring and annunciation. All equipment shall annunciate to the owner's desktop computers, cell phones, and third party monitoring services.

An onsite emergency power source shall be maintained at all times. The new design shall include temporary power provisions including, but not limited to, temporary switchboard(s), transfer switches, cables, and generators. The existing generators can be maintained as the onsite power source while the new are being installed but the new design shall clearly indicate the intended approach.

The entire system shall be designed in accordance with the latest applicable sections of the New Jersey Uniform Construction Code, International Building Code (IBC), specifically IBC section 403 for high rise buildings, NFPA 101 - Life Safety Code, NFPA 110 – Standard for Emergency and Standby Power Systems, the National Electric Code (NEC), specifically NEC Article 700.

The new equipment shall be designed to reenergize life safety loads with-in 10 seconds of utility loss. The new generator controls shall set a priority generator for life safety loads. This generator shall close on the emergency bus immediately upon availability. The other generators shall synchronize and close on the bus following the first generator. The controls shall assign backup priorities to each generator to cover a higher priority unit that is out of

service. A generator shall be available at all times of building occupancy to power the life safety loads and fire pump.

The new emergency switchboard shall provide physical separation or separate vertical switchboard sections, to maintain the separation requirements of NEC 700 between emergency, legally required, and optional standby systems.

Surge protection shall be installed on all emergency system switchboards and panelboards.

All boxes, enclosures (i.e. generators, panel boards, switchboards, transfer switches, etc.) shall be permanently marked so they can be readily identified as a component of the emergency system.

Additional Benefits and Considerations

Years ago the building participated in a demand response program coordinated by Trigen (Veolia). This program pays money in exchange for an owner agreement to use onsite power during times of peak utility demand. Typically, the utility notifies the owner with a request to reduce energy usage. The owner has a specific amount of time to comply to receive payment. Most requests occur during peak summer cooling days and last for a few hours. The new generators will provide the owner the ability to significantly reduce their peak electrical consumption and consideration should be given to participating in this program. Participation would need to be discussed with your PSE&G account representative and / or Veolia.

Recommendations

We recommend a complete replacement of the generator infrastructure as reflected in Option 2 above. Option 1 reflects a much lower cost to implement but does not address the availability of parts to repair the existing generators in the future. The complete replacement is recommended based on the existing equipment age, condition, and parts availability. The reliable supply of onsite power will continue to diminish as the equipment ages and parts become more difficult to obtain. We suggest proceeding with a complete replacement of the existing generators, controls, and distribution equipment as reflected in Option 2 above.

This report provides one possible approach but the final design will be based on the design consultant's recommendations following an exhaustive field survey and analysis.

The order of magnitude cost including fees and contingencies may be approximately $4,250,000 to 4,750,000 for the recommendations presented.

Appendices

1. Option 1 order of magnitude cost estimate
2. Option 2 order of magnitude cost estimate
3. Photographs
4. Trigen (Veolia) equipment summary
5. Highland Industrial Turbine Quote

Appendix 1

Option 1 Order of Magnitude cost Estimate

Generator Controls Only Replacement Order of Magnitude Cost Estimate

	Summary of Costs				**Totals**
A.	**Direct Material**				$987,000.00
		(# Hours) x	(Base Rate)		
B.	**Direct Labor:**				
	Foreman	0	$0.00		$0.00
	Journeyman	0	$0.00		$0.00
				Labor Subtotal	$0.00
C.	**Fringe Benefits:**				
	Foreman	0	$0.00		$0.00
	Journeyman	0	$0.00		$0.00
D.	**Other Direct Costs**				$0.00
	Total Labor and Materials			**Subtotal A-D**	$1,162,500.00
E.	**Overhead A-D**	**15%**			$174,375.00
F.	**Subcontractor Work**				$0.00
G.	**Equipment**				$0.00
				Subtotal A-G	$1,336,875.00
H.	**Profit A-G**	**6%**			$80,212.50
I.	**Labor Taxes**				
	1. Social Security & Medicare Taxes	**7.65%**			$13,425.75
	2. Unemployment Taxes (Federal & State)	**4.13%**			$7,239.38
	3. Workers' Compensation	**6.23%**			$10,933.65
J.	**Subcontractor Labor Taxes**				$0.00
K.	**Other Actual Costs (i.e. Bond Premium)**				
	1. Bond Premium	**2.50%**			$36,217.16
	Construction Cost Estimate (CCE)			**Total**	$1,448,686.28
	Design Services Estimate				$ 173,842.35
	DPMC Management Fees (8% of CCE)				$ 115,894.90
	Construction Contingency (10%)				$ 144,868.63
	Design Contingency (10%)				$ 17,384.24
	Permits				$ 3,000.00
	Approximate Current Working Estimate (CWE)			**Total**	**$1,903,676.39**

Note: The estiamte above represents a probable construction cost assuming all work is done immediately and should be adjusted for actual design specifications and inflation at the actual time of work. Projected costs indicated are based on current construction costs and anticipated fees. Actual fees, design service estimate, contingencies, permits, material, and labor costs should be adjusted based on the bids received from consultants and contractors.

Appendix 2

Option 2 Order of Magnitude cost Estimate

Generator Replacement Order of Magnitude Cost Estimate

Summary of Costs					**Totals**
A.	**Direct Material**				$1,788,770.00
		(# Hours) x	(Base Rate)		
B.	**Direct Labor:**				
	Foreman	0	$0.00		$0.00
	Journeyman	0	$0.00		$0.00
				Labor Subtotal	$0.00
C.	**Fringe Benefits:**				
	Foreman	0	$0.00		$0.00
	Journeyman	0	$0.00		$0.00
D.	**Other Direct Costs**				$0.00
	Total Labor and Materials			**Subtotal A-D**	$2,678,070.00
E.	**Overhead A-D**	**15%**			$401,710.50
F.	**Subcontractor Work**				$0.00
G.	**Equipment**				$0.00
				Subtotal A-G	$3,079,780.50
H.	**Profit A-G**	**6%**			$184,786.83
I.	**Labor Taxes**				
	1. Social Security & Medicare Taxes	**7.65%**			$68,031.45
	2. Unemployment Taxes (Federal & State)	**4.13%**			$36,683.63
	3. Workers' Compensation	**6.23%**			$55,403.39
J.	**Subcontractor Labor Taxes**				$0.00
K.	**Other Actual Costs (i.e. Bond Premium)**				
	1. Bond Premium	**2.50%**			$85,617.14
	Construction Cost Estimate (CCE)			**Total**	$3,424,685.80
	Design Services Estimate				$410,962.30
	DPMC Management Fees (8% of CCE)				$273,974.86
	Construction Contingency (10%)				$342,468.58
	Design Contingency (10%)				$41,096.23
	Permits				$3,000.00
	Approximate Current Working Estimate (CWE)			**Total**	**$4,496,187.76**

Note: The estiamte above represents a probable construction cost assuming all work is done immediately and should be adjusted for actual design specifications and inflation at the actual time of work. Projected costs indicated are based on current construction costs and anticipated fees. Actual fees, design service estimate, contingencies, permits, material, and labor costs should be adjusted based on the bids received from consultants and contractors.

Appendix 3

Photographs

Photo 1 – Existing turbine generators

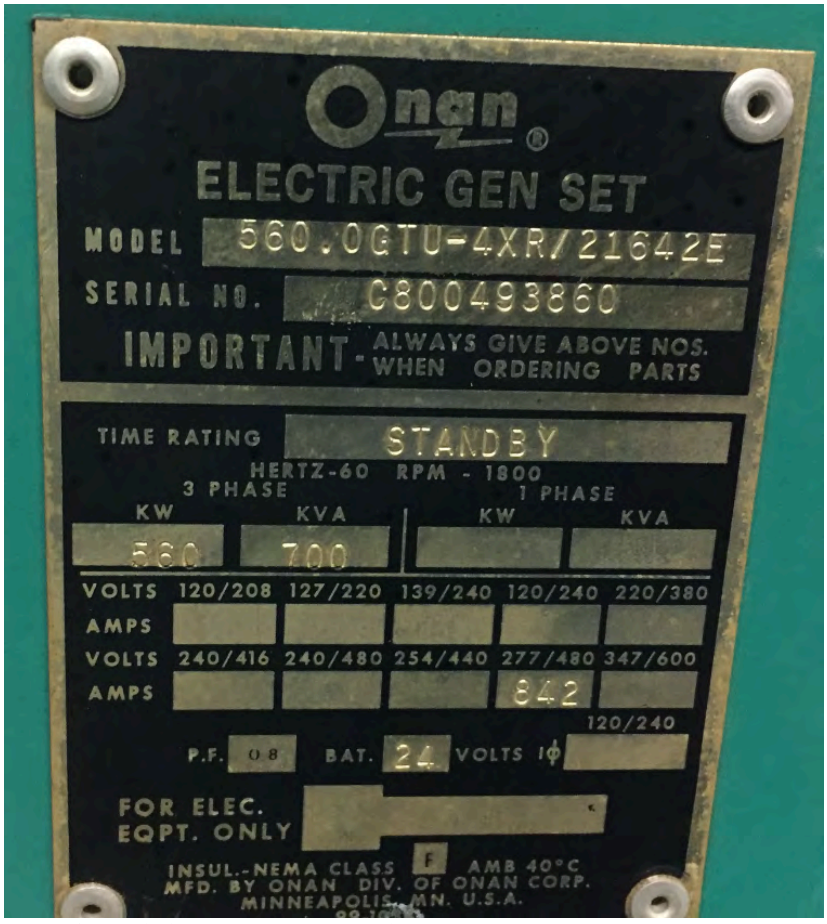


Photo 2 – Existing generator nameplate

Photo 3 – Existing Onan Synchronization Controls

Photo 4 – Existing Generator Breaker

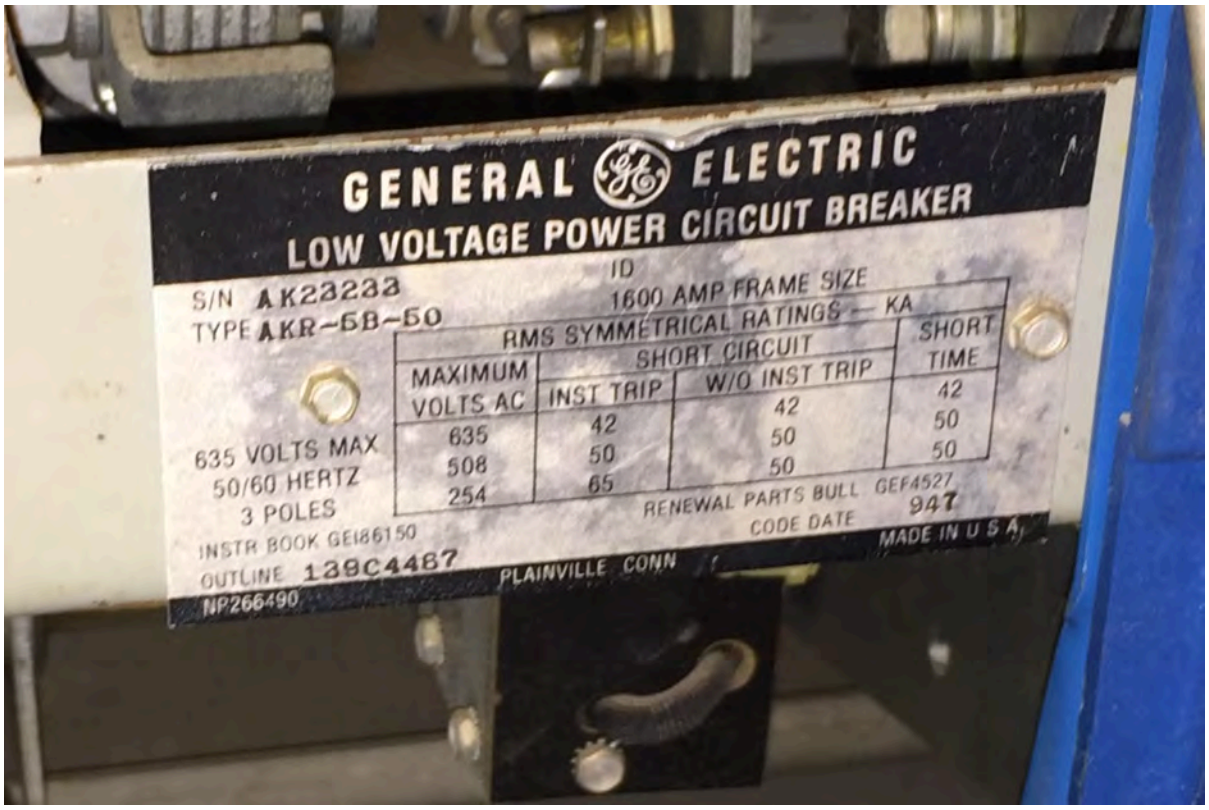


Photo 5 – Existing Generator Breaker Nameplate

Photo 6 – Existing Generator Breaker Motor Operator

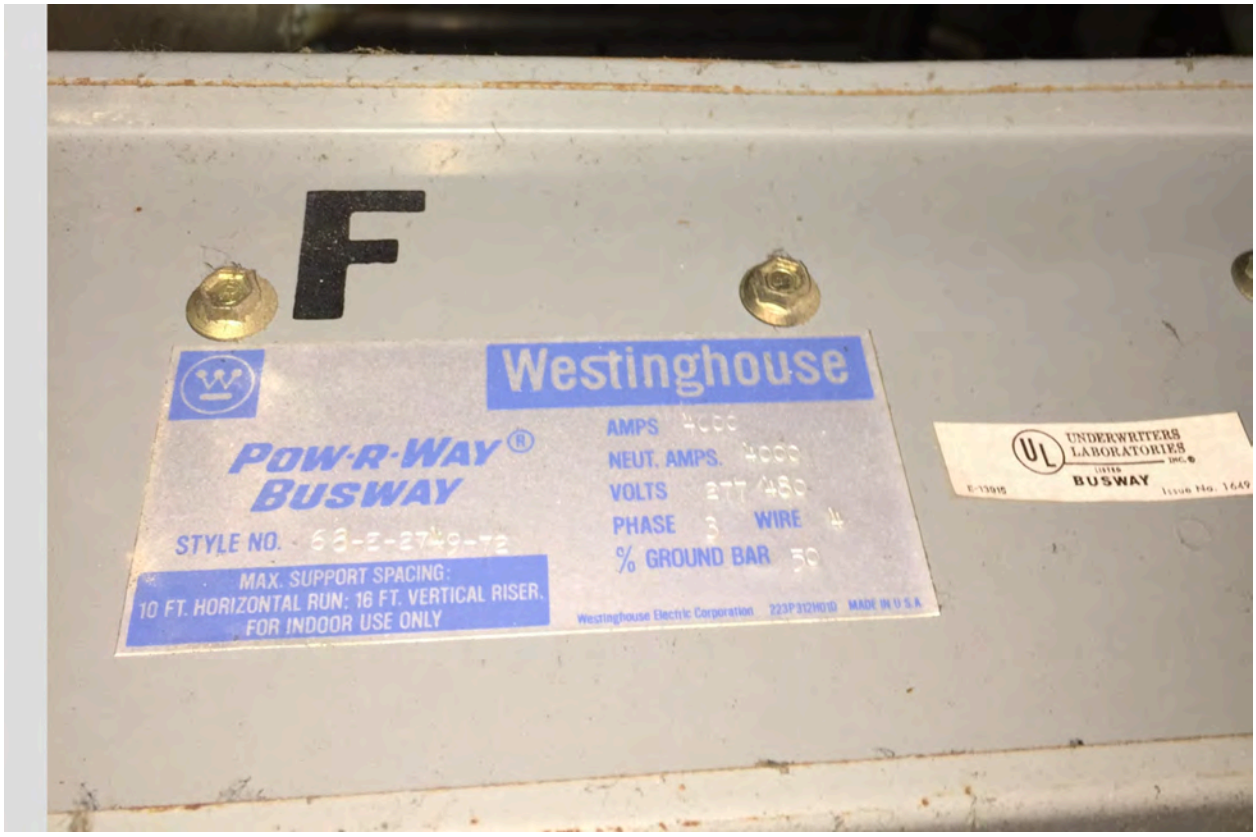


Photo 7 – Existing bus link between Paralleling Switchgear and Emergency Distribution Switchboard (EMDS)

Photo 8 – Existing Emergency Distribution Switchboard (EMDS)

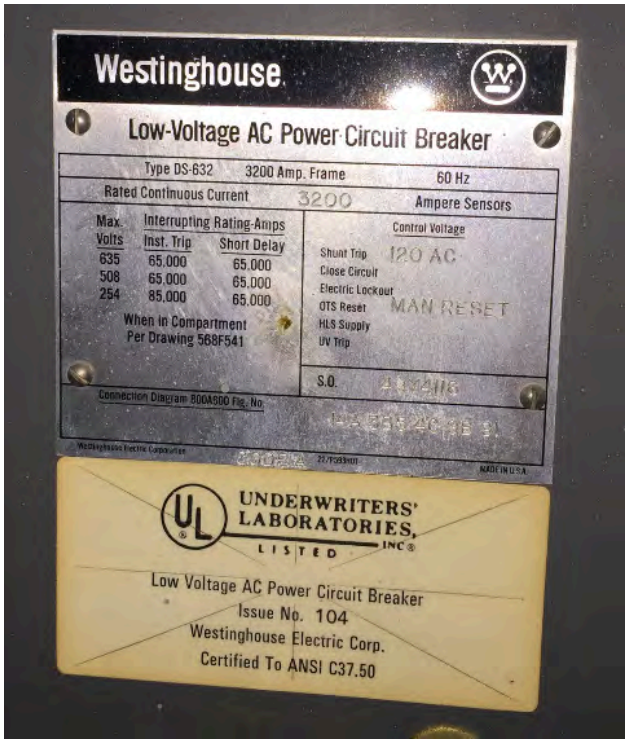


Photo 9 – Existing EMDS Main Breaker

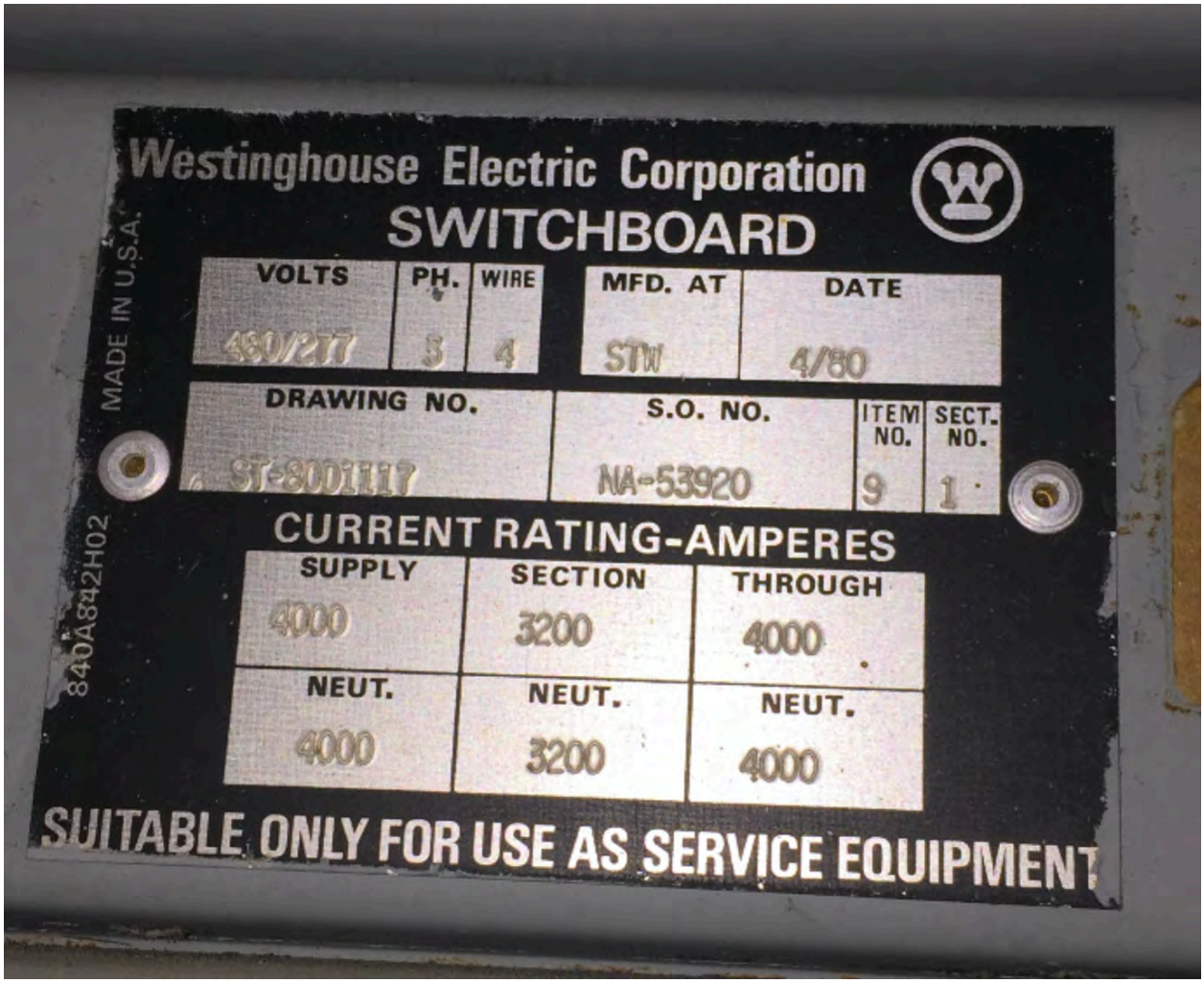


Photo 10 – Existing EMDS section 1 nameplate

Photo 11 – Existing EMDS Distribution Sections

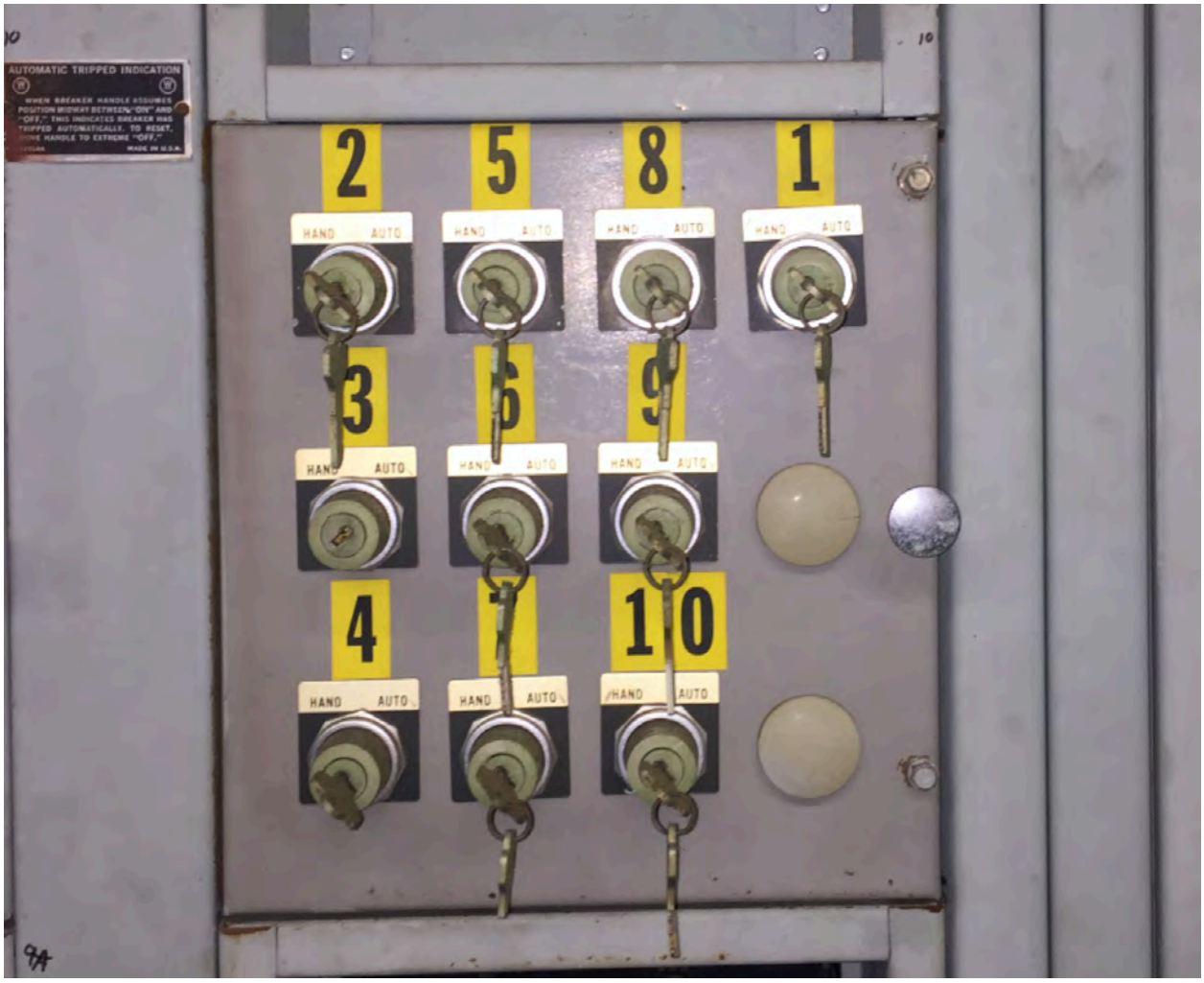


Photo 12 – Existing EMDS Motor Operated Breaker Hand – Auto controls

Photo 13 – Existing EMDS Distribution Breaker Ground Fault testing and annunciation panel

Photo 14 – Existing EMDS Ground Fault test panel close-up

Photo 15– Existing EMDP Neutral Grounding Resistor

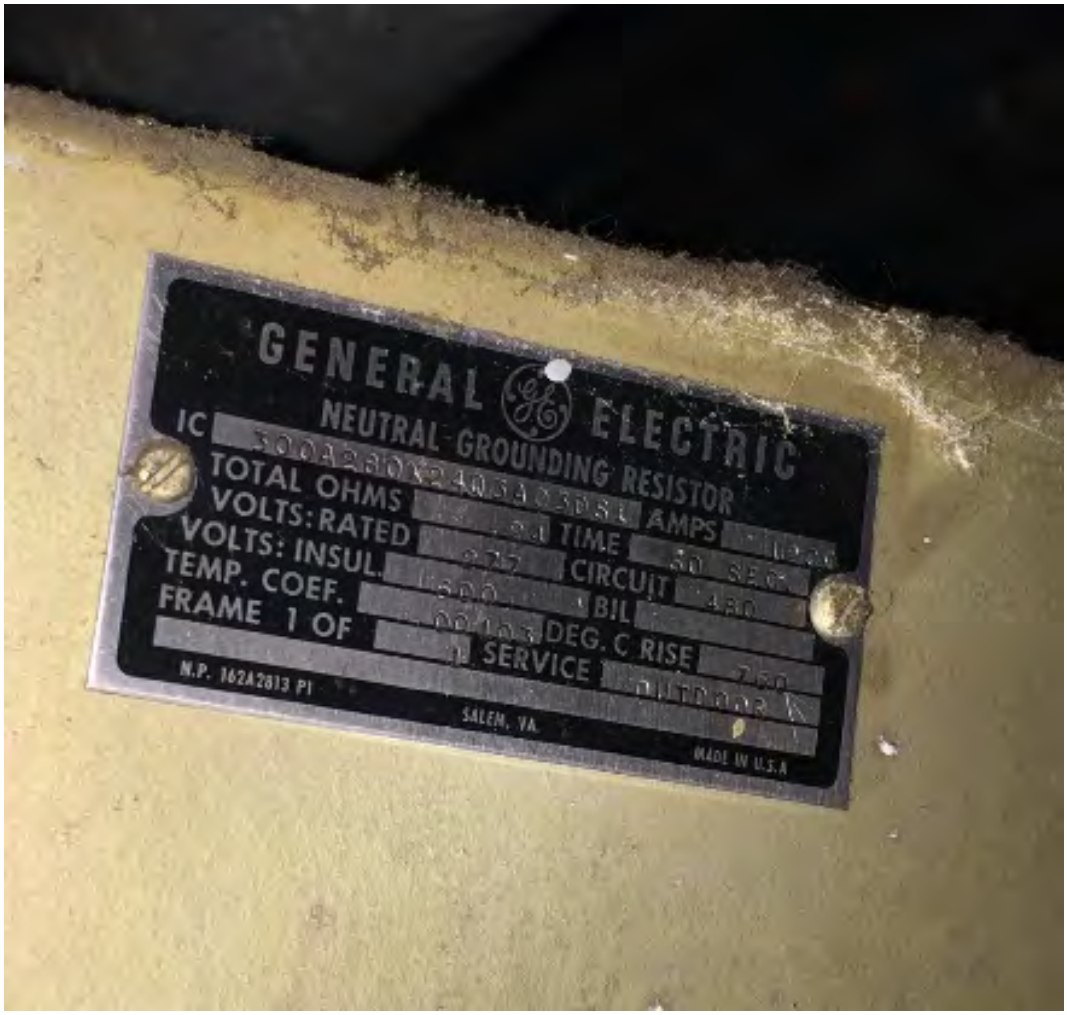


Photo 16 – Existing Neutral Grounding Resistor Nameplate

Photo 17 – Existing unitized transfer switches

Photo 18 – Existing 10,000 gallon diesel tank (In-ground along N. Warren St.)

Photo 19 – Existing day tank (9th floor)

Photo 20 – Existing fuel pumps in P-1 North Mechanical Room

Photo 21 – Proposed area above parking garage for new generators

Photo 22 – Photo of Structure under proposed area above.

Appendix 4

Trigen (Veolia) equipment summary

TRIGEN-TRENTON DISTRICT ENERGY CO., L.P.
A TRIGEN COMPANY
650 SOUTH CLINTON AVENUE, TRENTON, NJ 08611 (609) 396-1892 FAX (609) 396-7406

July 8, 1994

George Gross
GSA Administrator
33 West State Street
Trenton, NJ

RE: Letter of Agreement
Operation, Maintenance, Repair & Capital Replacement of Emergency Generator Equipment
Richard J. Hughes Justice Complex (the company)

Dear Mr. Gross:

The Trigen-Trenton Energy Company, L.P., in an Equipment and Ground Lease Agreement with the State of New Jersey, currently leases the Steam Absorption chillers at the Justice Complex. Under that agreement, the Company is required to maintain, operate, repair, and replace when necessary all equipment in the condition it was received by the company throughout the contract life, normal wear and tear excepted.

The Company wishes to assume responsibility under the same agreement, for the operation, maintenance, repair and replacement of the four (4) turbine and other emergency generators currently within the Justice Complex, for the fee of Thirty Eight Thousand, Five Hundred Dollars ($38,500) annually.

A. Scope of Proposal:

1. Return all generators to operational condition.

2. Add control wiring for remote operation and monitoring from the Company's plant.

3. At no cost to the State of New Jersey, perform all required maintenance repairs and parts replacements when necessary.

4. Perform all tests required by State and/or Municipal codes.

5. On demand required by PSE&G's interruptible rate structure operate emergency generators to allow a 1MW (one thousand kilowatt) peak reduction. A demand reduction shall be provided within a notice of 30 minutes, from PSE&G.

EXHIBIT D.3

B. Conditions of Agreement:

All remote control wiring to the Company's plant will be borne by the Company. All internal building wiring to connect to interruptible loads and expansion of the Company's Justice Complex control panel processor needed to receive commands from the plant not to exceed $36,000, shall be borne by the State of New Jersey.

Any savings obtained from PSE&G's contract for interruptible service schedule (estimated currently at $48,000 annually) will be the property of the State of New Jersey. Fuel costs associated with the operation of the emergency generators, shall be paid as before by the State of New Jersey.

If you concur, please sign this Agreement as an Amendment to the Chiller Water Agreement between the Company and Customer and execute the appendices as described and return the original and one copy of the executed agreement.

To memorialize the agreement to lease the existing electric emergency generator equipment in accordance with our existing Equipment and Ground Lease, please add to Section 9 Appendix C of the lease Agreement, page 62-N as shown.

For: Trigen-Trenton Energy Co., L.P.
By: Trigen Energy Corporation
Managing General Partner

Donald Leibowitz, President

For: State of New Jersey
Dir. Div. of Purchase & Property

Lana J. Simms, Director

By: Approved as to Form
Attorney General State of New Jersey

By: Deborah Poritz, DAG
Deborah Poritz
Attorney

Approved As To Form
Deputy Attorney

Approval Recommended
Deputy Administrator
Robert F. Harding

EXHIBIT D.3

	TRIGEN	Trigen Energy Corporation 650 South Clinton Ave Trenton, NJ 08611 Project: JUSTICE COMPLEX EMERGENCY GENERATOR PROJECT			
rev	Date	Description	Chk'd	Title: JUSTICE MODEL #'s 9th FLOOR	
	7/8/94			Drawn By: J TOY	Checked By: WCD
				Scale: None	Project #:
CAD File: JASON/JUSTICE/GENMODEL					Drawing #: 2

1. ONAN ELECTRICAL GENERATOR SET
   MODEL# 560.OGTU-4XR/21642E
   SERIAL# C800493861
   560KW 700KVA

2. ONAN ELECTRICAL GENERATOR SET
   MODEL# 560.OGTU-4XR/21642E
   SERIAL# C800493859
   560KW 700KVA

3. ONAN ELECTRICAL GENERATOR SET
   MODEL# 560.OGTU-4XR/21642E
   SERIAL# C800493860
   560KW 700KVA

4. ONAN ELECTRICAL GENERATOR SET
   MODEL# 560.OGTU-4XR/21642E
   SERIAL# C800493862
   560KW 700KVA

5. RECTIFIER
   RECT 1 BC 102-24-50
   C-NO. 6176203
   ART. NO. 4725-641930101

6. RECTIFIER
   RECT 1 BC 102-24-50
   C-NO. 6176214
   ART. NO. 4725-641930101

7. RECTIFIER
   RECT 1 BC 102-24-50
   C-NO. 6176203
   ART. NO. 4725-641930101

8. RECTIFIER
   RECT 1 BC 102-24-50
   C-NO. 6176203
   ART. NO. 4725-641930101

EXHIBIT D.3

	TRIGEN	Trigen Energy Corporation 650 South Clinton Ave. Trenton, NJ 08611 Project: JUSTICE COMPLEX EMERGENCY GENERATOR PROJECT			
rev.	Date	Description	Chk'd	Title: JUSTICE MODEL #'s 9th FLOOR	
	7/8/94			Drawn By: J TOY	Checked By: WCD
				Scale: None	Project #:
CAD File: JASON/JUSTICE/GENMODEL					Drawing #: 3

9. RECTIFIER
   RECT 1 BC 102-24-50
   C-NO. 6176203
   ART. NO. 4725-641930101

10. 325 gal. FUEL STORAGE TANK

11. ASCO AUTOMATIC SWITCH CO. TRANSFER BOX
    LABELED: ATS FEED FOR SWBD FOR JMIS COMPUTER RM.

12. ONAN AUTOMATIC TRANSFER SWITCH BOX

13. ONAN AUTOMATIC TRANSFER SWITCH BOX
    LABELED: COMPUTER RM. DIST. PANEL
14. ONAN AUTOMATIC TRANSFER SWITCH BOX
    LABELED: DATA-CENTER CHILLED WATER POWER PANEL

15. SYNCHRONIZATION PANEL
    MODEL# OSPS3000-4X/24A
    SERIAL# C800493857

16. ONAN POWER SYSTEM

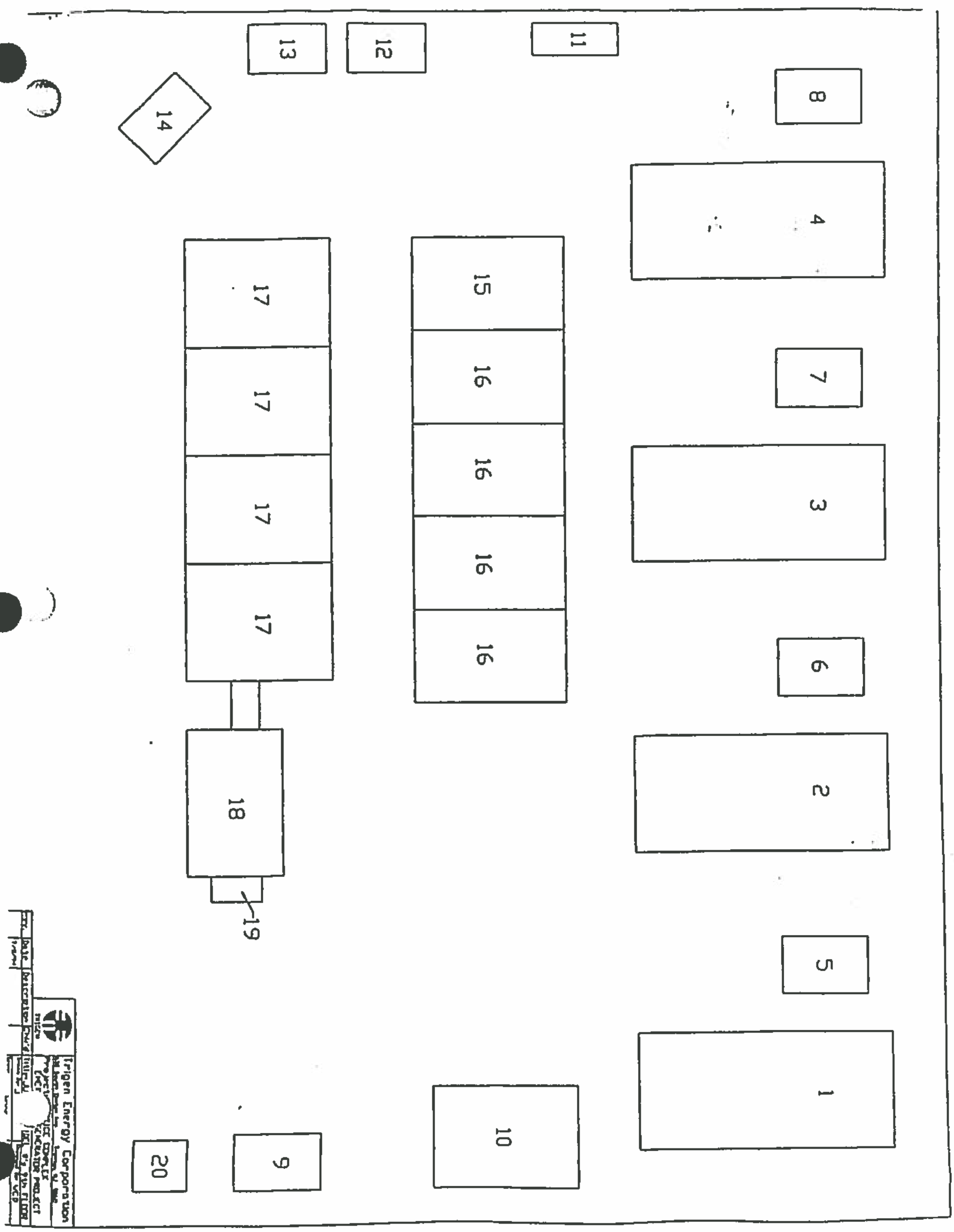
17. DISCONNECT SWITCH PANEL

18. ONAN POWER SYSTEM

19. ONAN AUTOMATIC TRANSFER SWITCH BOX

20. TRANSFORMER
    SERIAL# 8007-8
    STYLE 8E809
    CLASS AA
    45 KVA H.V. 480 DELTA L.V. 208Y/120

EXHIBIT D.3



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Trigen Energy Corporation

EXHIBIT D.3

Appendix 5

Highland Industrial Turbine Quote

EXHIBIT 'D'
FEASIBILITY REPORT

Highlands Industrial Turbine Service, Inc.

919 Highway 33, Suite 30
Freehold, New Jersey 07728

Estimate

Date	Estimate #
10/27/2017	1502-1536

Name / Address
VEOLIA SUPPORT SERVICES NORTH AMERICA 125 S. 84TH STREET, SUITE 175 MILWAUKEE, WI 53214 ATTN: us.apinvoices@veolia.com

Project

Description	Qty	Rate	Total
FURNISH, INSTALL AND TEST OVERHAULED / EXCHANGE GAS TURBINE ENGINE FOR ONAN GENERATOR #3 LOCATED AT JUSTICE COMPLEX.			
OVERHAUL/EXCHANGE GARRETT 831 TURBINE	1	105,400.00	105,400.00T
GASKETS, HARDWARE, CONSUMABLES		250.00	250.00T
INBOUND FREIGHT ESTIMATED		950.00	950.00
OUTBOUND FREIGHT CORE RETURN ESTIMATE		950.00	950.00
INSTALLATION LABOR- 2 TECHNICIANS- 6 DAYS EACH		12,000.00	12,000.00T
DAMAGED GAS TURBINE ENGINE IS TO BE RETURNED TO OEM AS CORE.			
OVERHAULED ENGINE HAS NINE (9) MONTH WARRANTY FROM OEM STARTING AT DATE OF SHIPMENT. PLEASE REFER TO HIGHLANDS OVERHAUL POLICY REGARDING LABOR.			
ESTIMATED WEIGHT OF ENGINE IS 1000LBS.			
AS NOTED IN PAST REPORTS: THE GENERATOR, ENGINE AND LOAD MANAGEMENT CONTROLS ARE COMPLETELY OBSOLETE. LITTLE OR NO SERVICE SUPPORT EXISTS FOR ANY THESE ITEMS.			

Subtotal	$119,550.00
Sales Tax (6.875%)	$8,088.44
Total	$127,638.44